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November 13, 1972

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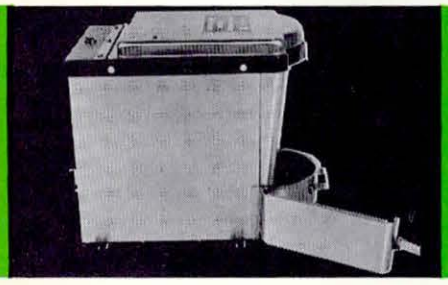

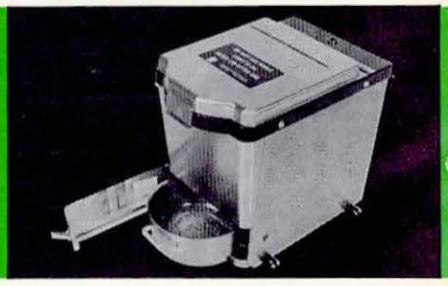

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November 13, 1972 • Vol. 173 No. 9

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Inside

LUTHER MILLER

THE MYTH-MAKERS

Our lexicon defines myth as "an ill-founded belief held uncritically esp. by an interested group." The ill-founded belief which esp. engages our attention in this issue of Railway Age is the notion that streets and highways comprise the best solution to America's problems of mass mobility. True, the hit-or-myth tactics which the highway lobby employs in promulgating this propaganda are less effective today than they once were. Increasingly, the word is getting around that the concrete mixer cannot churn up all the answers.

Yet public opinion remains largely uninformed. "You hear it all the time," notes Transit Editor Joe Asher. "Maybe it's the taxi-driver saying, 'Transit? Naw—it may be all right for New York but not for here.' Or it can be the guy in the next barber chair saying, 'Who you trying to kid? Rapid transit, that's ancient history.'

"If you go to a transit meeting, a gathering of the experts, you get the facts, of course. But who goes to transit meetings? Transit people. So that's preaching to the converted. The plain, observable reality is that the ordinary man in the street has vague, fuzzy, contradictory ideas about rapid transit. As long as that's true, elected public officials, even the most enlightened ones, will get just so far out in front on transit questions, not more. They can only go as fast as public opinion will let them.

"For transit supporters, that can sometimes be tragic. Needed laws don't get passed in the state legislatures or Congress. Bond issues die at the polls. And there's one simple explanation. The guy out there, the ordinary guy, is confused. Often enough, he believes facts about transit which are not facts at all."

We offer "13 myths holding back rail transit" (p. 20) as a kind of primer that true believers may use in helping to unconfuse the layman.

And we offer "BART's first 50 days" (p. 24) as proof that a myth is not as good as a mile—not a passenger-train mile, anyway.

REPORT FROM WEST COLTON

It was 19 months ago that directors of the Southern Pacific decided to appropriate $39 million for construction of a new yard at West Colton, Calif.—a yard, said SP at the time, that would be the largest in the Far West and "the most technologically advanced in the world" (RA, March 29, 1971). The work is now well under way, and a few weeks ago Associate Engineering Editor R.E. (Bob) Dove went out to West Colton, camera in hand, for an on-the-scene look. It is a vast project, and even with a $39-million budget careful cost control is essential. Bob discovered, among other things, some ingenious cost-cutting techniques devised by SP's engineering department. Some of these he was able to photograph; the pictures appear as part of the report beginning on p. 35.

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NOVEMBER 13, 1972

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Short and Significant

FULL CREW OUT IN ARKANSAS

And now there are none. Arkansas, the nation's lone state holdout with a full-crew law, saw voters throw their overwhelming support behind an initiated act that limits crew sizes while at the same time protecting jobs of those affected. The act, which has many of the same provisions contained in an agreement reached earlier between railroads operating in the state and the United Transportation Union, is expected to save the railroads upwards of $13 million a year.

NEW RATE REQUEST DUE IN JANUARY

Rails will ask ICC for a general across-the-board freight rate increase in January, said AAR sources, but the rate level has not yet been agreed upon. Despite the selected commodity increases averaging 4.3% which went into effect Oct. 23, rail revenues will not be sufficient to offset the last 5% wage increase, not to mention a whole new round of labor contract negotiations next year, said the sources.

PASSENGER-ONLY NEW YORK-WASHINGTON LINE?

Penn Central and Amtrak officers have had discussions over sale of one or more of PC's four tracks between New York and Washington to either Amtrak or a quasi-governmental agency. The track then would be utilized exclusively for passenger service. DOT officials disclosing the talks said the sale could bring PC anywhere from $50 to $100 million. But they said financing of such an agreement and a corollary DOT proposal to invest $500 million in government loans for upgrading of Northeast corridor track, roadbed, and terminals is dependent upon Congressional readiness next year to open up the Highway Trust Fund to non-highway uses and completion of an FRA survey now under way of Northeast Corridor rail facilities.

AMTRAK GOES FOR SOMETHING NEW

Amtrak has now taken its long-awaited plunge into the new-equipment market—with an order for 40 new locomotives from EMD for delivery before next summer's peak passenger-traffic season. The 3,000-hp diesel-electric units, to be purchased at a cost of $18 million, will be six-axle, six-motor units, designated SDP40F by Electro-Motive. They will go into service on three routes—Chicago-Texas, Chicago-Los Angeles and Los Angeles-San Diego—and will replace 74 lower-horsepower units now under lease from Santa Fe. The order represents first use of authorization granted by Congress last summer for up to $147 million in capital improvements.

YEAR'S FREIGHT-CAR ORDERS TOP 34,500

In September, for the second month in a row, more than 5,000 new freight cars were ordered. The 5,095 new cars brought the order total for the first nine months of 1972 to 34,524, down by about 8% from the comparable 1971 period. Commercial shops, which received 88% of the orders in the first three quarters of 1971, saw their share of a slightly smaller market shrink to 85% in the comparable 1972 period.

TRANSIT-CAR-COMPONENT ORDERS PLACED

The transit-car-component market has been given a big boost by two recent orders for subway cars. Pullman-Standard—which received an order from New York City Transit Authority for 752-cars—has ordered the propulsion and control systems from General Electric; the truck assemblies from Rockwell's Transportation Division; door operating, air comfort control and miscellaneous equipment from Vapor Corp.'s Transportation Systems Division; and lighting systems, certain exterior lighting units and air diffusers from Gulton Industries' Luminator Division. Rohr Corp. placed an order with Vapor for 300 sets of equipment for cars it is building for Washington Metropolitan Area Transit Authority. (The Rockwell division had earlier received an order for truck assemblies for the WMATA cars.)

NEW ENGLAND'S NEWEST RAILROAD

The Providence & Worcester, which last operated as an independent railroad 84 years ago, is set to resume that status at year's end. The 43-mile line in Rhode Island and Massachusetts has been operated by Penn Central and its New Haven predecessor since 1888; the larger road holds 28% of P&W stock. While settlement of intricate real estate claims must still be approved by P&W directors and PC's reorganization court, the two roads are preparing to establish coordinated service and rate divisions.

SUPREME COURT WILL HEAR DEPRECIATION CASE

The Supreme Court has agreed to decide if Burlington Northern and other railroads are entitled to a tax deduction for depreciation on overpasses, underpasses, signals and signs worth nearly $1 billion and built with Federal aid under a Depression program that lasted until the 1950's. The railroad contention, upheld by an appeals court, is that since railroads are expected to maintain and replace the property they are entitled to the deduction. IRS, disagreeing, brought the suit, from which Justice Lewis F. Powell, Jr., has disqualified himself because of stock holdings.

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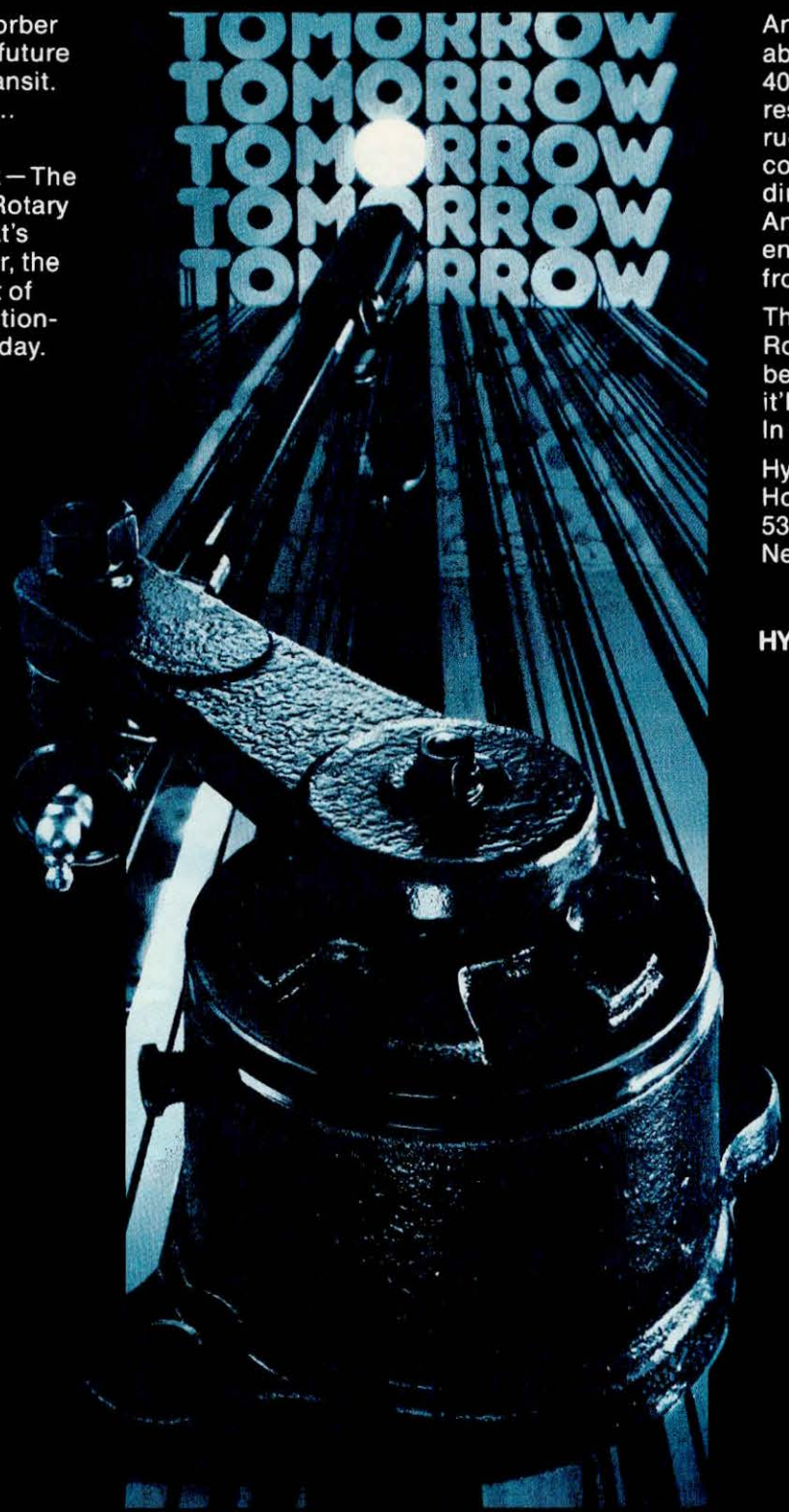

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NEWS

Multiple solutions proposed for Northeast crisis

There is no region with more railroad problems per square mile than the Northeast. Suddenly there seems to be almost the same density of proposed solutions. With a half-dozen Eastern roads representing well over half the region's rail mileage in bankruptcy, there is growing concern about even short-term continued operation of some of the lines.

Early next month, for instance, the Central Railroad of New Jersey bankruptcy court has scheduled a hearing on another petition by CNJ creditors calling for the road to be shut down. Such closure is not beyond the realm of possibility in view of the action of Judge Anthony Augelli who earlier this year authorized CNJ to end all its service in Pennsylvania without the formality of ICC and Public Utility Commission hearings (RA, May 8, p. 12). The bankrupt Lehigh Valley took over operation of the 175 miles of CNJ line, proposing to abandon about 75 of them.

A few days ago New Jersey Governor William T. Cahill appealed to Transportation Secretary John A. Volpe to mobilize Federal assistance should the court order a suspension of Jersey Central service. The state represents about the highest concentration of bankrupt railroads. In addition to CNJ and LV, New Jersey is served by Penn Central, Reading, Erie Lackawanna and Lehigh & Hudson River which are all in bankruptcy.

The situation was recently appraised by Penn Central President William H. Moore: "There is an overcapacity of railroad trackage in the East. So far no one has come up with any way to get rid of this surplus railroad plant. There are some interesting ideas coming forth, but these have not yet progressed beyond the discussion stages."

"Nothing would be solved by a plan which would combine any group of railroads as each exists today. This would merely freeze in perpetuity a lot of excess mileage. Any kind of merger or affiliation, ought to be accompanied by a thorough weeding out of duplicated, little-used trackage."

Then Moore made a new proposal. "It seems," he said, "that despite legal complications, the trustees of the bankrupt railroads and perhaps even the judges might undertake some sort of joint approach which could cut through inertia and red tape to the heart of the problem and make remedial action possible. This would be in keeping with the duties and responsibilities of the courts and trustees, and particularly with regard to the public interest."

RAIL AND TRANSIT. Transportation Secretary John A. Volpe's recent trip to New Jersey involved not only discussions concerning survival of CNJ, LV and Reading but also included a rush-hour transit ride on Port Authority Trans-Hudson with Louis J. Gambaccini (right), director of the Rail Transportation Department of the Port Authority of New York and New Jersey, and with Commissioner Andrew C. Axtell (center).

John F. Nash, and Robert C. Halderman, trustees of LV, set off the current round of proposals for rationalization of the Eastern railroad plant with their proposal for consolidation of LV, CNJ and Reading. Nash sees the three lines immediately consolidating their operations, taking the best part of each and putting them together while the remaining facilities would be liquidated for benefit of the creditors. In their proposal filed with Judge John C. Fullam (also heading PC reorganization) they also anticipated that Erie Lackawanna would subsequently be a party to this consolidation.

Subsquently, Reading President Charles E. Bertrand proposed a Northeast National Railway System which would incorporate Reading, CNJ, LV and the Lehigh & Hudson River. Bertrand would have Northeast acquire the necessary railroad plant from the four lines with Federal assistance, leaving the debtor companies free to reorganize as general business organizations. Each would retain real estate and other assets not subject to the cyclic fortunes of railroading, but would have a large tax loss carry forward, making them attractive enough to finance other enterprises through public offerings.

Spencer Miller, Maine Central president, has advocated a single national railroad as an alternative to government ownership (RA, Sept. 25, p. 10). His railroad neighbors—John W. Barriger, chief executive officer of Boston & Maine, and F.C. Dumaine, chief executive officer of Bangor & Aroostook, have revived the idea of a merger of the railroads of northern New England, although currently only B&M is in reorganization.

New Jersey Transportation Commissioner John C. Kohl has predicted that by early 1973 something will be happening in the CNJ-LV-Reading situation. Consolidation, contrasted with corporate merger, he says, would permit elimination of duplicate facilities, services and managements.

Transportation Secretary Volpe has assured New Jersey that his staff will immediately explore the deteriorating rail situation with ICC and other Federal agencies, announcing that he plans again to meet with Cahill and with Governor Milton Shapp of Pennsylvania before Dec. 1.

ICG train collision kills 44

In the more than 45 years since Illinois Central began operation of its electrified Chicago commuter lines, the safety record—by the ultimate measure, passenger fatalities—had been close to perfect. But all that ended in the early part of the morning rush hour on Monday, Oct. 30. A northbound train, made up of four new doubledeck Highliners, missed a stop at a station a short distance south of Chicago's Loop. The train backed up, and was struck by a second northbound train, this one made up of the older single-level coaches. The lead car on the second train sheared through the last car on the Highliner train. Forty-four persons died, more than 300 were injured. Rescue work continued for hours, and it was about six hours after the accident occurred that the last of the injured were removed from the wreckage.

While rescue operations still went on, however, investigations began. But, despite news-media speculation that covered just about every conceivable accident cause, it may be months before there is an "official" report. Without doubt, this accident will result in the most thorough probe ever made by the National Transportation Safety Board during its brief history. Without doubt, too, there will be a raft of other investigations, at the city, county, state and Federal level.

There will be much to investigate, not only to determine cause but also to develop recommendations aimed at preventing another such tragedy. Safety experts will be looking at the equipment and at signal systems. In fact, a "replay" was staged on the following Sunday morning so that investigators might study the positions and movements of the two trains and the signal changes which those movements produced.

Investigations will also center on the human factor and on the railroad's operating rules and practices, including those related to the backing-up of trains and the protection of the train while backing.

At this point, no one can say with any degree of assurance what NTSB and the other probers will come up with. And if there is a suspicion that this was an accident caused by the simultaneous occurrence of a whole set of unlikely actions, it is still only a suspicion.

As a footnote to the tragedy: Two days after the accident, the first damage suits were filed, asking $2 million on behalf of two survivors. Later, Illinois Central Industries, parent of IC Gulf, indicated that it did not anticipate a serious adverse financial situation being created as a result of the wreck.

Watching Washington

REID BEDDOW

UNCOMMON OWNERSHIP

Did ICC's decision allowing Southern to operate a barge line represent a victory for common ownership? Not really, say transportation lawyers following the case. They point out that Section 5(16) of the Interstate Commerce Act, which embodies clauses of the famed Panama Canal Act, does in fact allow rails to own a water carrier (except one moving through the Panama Canal) if such control is "advantageous to the public convenience" and if rail control does not "exclude, prevent, or reduce competition by water" on the route. "The Panama Canal Act has never been a flat prohibition on rail entry into water transportation; it only makes it very difficult," notes one lawyer, "and ICC was merely upholding the law as written." The lawyers cautioned that local circumstances peculiarly governed the Southern case because Louisville & Nashville and Illinois Central Gulf had no lines into the origin coal mine area and that all coal moving to the south from the mines was shipped exclusively by water.

Justice Department's Antitrust Division actually supported the Southern plan, arguing that it would introduce competition into a concentrated transportation industry.

Such niceties will probably not allay the potentially explosive fears of other modes that rails are quietly mounting an assault on prohibitions of common ownership. The assumed lines of credits rails could get from banks to support common ownership ventures has always been one of the darker images periodically raised in the boardroom of American Trucking Associations.

The Southern barge case, on the heels of recent CAB approvals of rail entry into air freight forwarding and steady ICC approval of service expansion of rail-owned trucking lines, keeps that image alive.

A recent report that DOT has under study a plan to permit common carrier expansion into other modes also adds to the fears. A well-placed DOT source confirmed the existence of the study, adding that "we study a lot of things, and this one is not really anything new." He noted the concept was aired at the time of DOT's so-called deregulatory proposals last year, and was not written into any proposed legislation then. And an AAR officer said any controversy now over common ownership would only destroy intermodal unity on the far more important question of enacting the industry's surface transportation proposals next year.

SLOW ORDER FOR HIGH-SPEED TRAINS

The Amtrak board on Oct. 28 deferred any decision soon on acquisition of foreign high-speed passenger equipment. But a straw in the wind is the $200,000 FRA contract let Nov. 1 to the French National Railroad (SNFC) for data on French technology. Meanwhile, British Rail is sending its research marketing director, Paul Cautley, to Washington this month to renew its offers of both software and hardware. One possible reason for Amtrak's slow order on new equipment from overseas: the failure of Congress to grant the full $227 million in Federal assistance authorized last June. Congress actually appropriated only $179 million of that amount.

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Dixon calls for new approaches

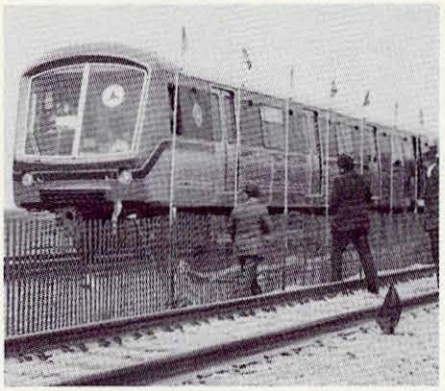
Rock Island President William J. Dixon unleashed a strong attack on the status quo—and made an equally strong pitch for change—in opening the 1972-3 program of the Western Railway Club, largest such railroad/supplier organization in the nation. Among Dixon's comments:

"Everyone, it seems, knows how to run the railroads or at least how they should be run—so much so that it would appear that we in the business have no idea what to do about our affairs... We're told what prices to charge, what facilities we can keep or not keep or modernize, how our track and equipment should be built and maintained and used, how large our work force must be, who we are to employ, what records we must keep and how many copies must be sent to all and sundry, what we are to pay for the use of each other's equipment, what services we are to render on what basis and under what conditions, and so on, ad infinitum...

"If we try to wiggle out of this straitjacket by introducing an innovation, this too is subject to rules and regulations which preclude its being developed to its full potential. The trouble is, in putting all these strings on us, or trying to, no one ever bothers to scrutinize the rationale or question the economics—the cost to the railroads, the cost to the economy, the cost to society...

"Having driven the railroads to the wall through all kinds of restrictive and punitive measures, there are now those who would rescue us, again at the expense of the taxpayer, by having the government acquire and reshape our trackage and rights-of-way. Ostensibly, this would be to help correct the imbalance brought about by the lavish government expenditures for other forms of transportation through the years. In fact, it could be a device to push us closer to nationalization and a facade to force the taxpayer to finance more rail passenger service, whether he wants to use it or not...

"Our predicament has generated countless unnecessary costs for all sectors of the economy—and the only solution preferred has been more of the same. Before we all succumb to the wiles of the government see-all, take-all, direct-all, and dole-out-all philosophy, businessmen generally and all individuals dedicated to the preservation of free enterprise and rewards commensurate with achievement must abandon their complacency, unite and use every means at their disposal to get across to the nation the story of the pitfalls of our present course. It will not be an easy job. Our system of values has been corroded, not only by the pervasive influence of those who would get 'something for nothing' but also by those who view business and profits as evil and who believe that somehow those who are 'doing good' at someone else's expense are the only ones making a real contribution to society."



SOAC: The replacement link

Not a missing link, but a replacement link, was how U.S. Transportation Secretary John A. Volpe described the pair of State-of-the-Art Cars (SOACs) for rapid-transit service which were unveiled in Pueblo, Colo., last month. The pair of stainless steel 75-footers have been developed to demonstrate the optimum in current technology in "rail rapid vehicle development," according to the Urban Mass Transportation Administration.

Boeing's Vertol Division, chosen as systems manager for UMTA's Urban Rapid Rail Vehicle and Systems Program, is charged with developing vehicles "as comfortable, reliable, safe and economical as possible." The SOAC is the first phase. It will be followed by the Advanced Concept Transit (ACT-1) vehicle to demonstrate the advancements possible in transit cars, and ACT-2 which is to show the improvements possible in rail rapid subsystems.

After tests at Pueblo, the SOACs will be placed in revenue service in New York, Philadelphia, Boston, Cleveland and Chicago for relatively short periods.

Said Secretary Volpe: "Despite incremental improvements over the years, the transit systems in those cities still represent—to a great degree—the technology of the past. Our challenge in building these SOACs was to incorporate every new change we could think of, and then go out and think of a few more.

"The development of the SOAC is a comprehensive effort drawing on the resources of many organizations and the talents of people, both in government and in private industry. Vertol has brought aerospace systems management techniques to the program. The cars were built by the St. Louis Car Division of General Steel Industries and the industrial design is by Sundberg-Ferar. This combination of traditional car-builder and aerospace know-how is exactly what we are looking for to take advantage of the best of both worlds."

Other major components include propulsion, braking and controls by Garrett AiResearch, trucks by GSI's Castings Division, and heating and air conditioning by Safety Electrical Equipment. Eighteen other firms also contributed to the supply of components for the cars.

$33-million grant for MBTA light rail

Light rail, which in less image-conscious times meant street cars, got a big boost with a pre-election announcement by the U.S. Department of Transportation that it was granting almost $33 million toward acquisition of 150 new vehicles for subway/surface lines of Massachusetts Bay Transportation Authority. The articulated, two-unit cars are part of an $88-million commitment of Federal and local funds to upgrade MBTA's so-called Green Line network which involves 39.3 route miles.

Previously, Urban Mass Transportation Administration had granted $25.4 million toward the cost of upgrading track, roadbed, structures, power distribution, signals, communications and maintenance facilities. The latest grant, according to General Manager Joseph C. Kelly, "will permit MBTA to go forward with obtaining new vehicles to utilize these other improvements."

The double-ended cars, each accommodating 219 passengers, are 50% longer and slightly wider than the PCC trolleys they are to replace. A national standard for the new light-rail vehicle was developed by U.S. transit properties operating street cars and includes MBTA and San Francisco's Municipal Railway. Bids are currently being advertised and two prototype cars are to be delivered to MBTA in late 1974. The other cars are to be completed in 1975.

The cars are to be capable of individual operation or may be operated up to four in a train. There will be three double doors per side, aimed at cutting the loading times at stations. Passenger comfort will be enhanced with semi-upholstered seats, improved lighting, tinted windows and air conditioning.

◀ Circle 7 on coupon page 33

Lines on Labor

GUS WELTY

SAFETY: MAKING IT HAPPEN

One of the bitter ironies of the week of Oct. 30 was a matter of timing. On Oct. 30, 44 persons were killed and more than 300 injured in an accident involving two Illinois Central Gulf commuter trains. On Oct. 31, the Railroad Section of the National Safety Congress went into session in a Chicago hotel not more than a few miles away from the site of the ICG tragedy. Irony aside, however, this was to be one of the better-planned NSC meetings—bringing together three inter-connected elements in railroad safety: Rail management, rail employees and their organizations, and government. On all sides, the planning paid off. And Burlington Northern President Robert W. Downing may have summed up best what's needed to make a safety record good: Don't think you can watch it happen, he said, and don't be among those who really don't know what's happening. Make it happen.

WHAT IS SAFETY? IT'S TECHNOLOGY—AND PEOPLE

BN's president talked about the role of technology in improving safety—for instance, the increased use of rail-testing equipment. But he concentrated on the human element—and he tied safety closely to management approaches not only to safety specifically but also to employee-relations broadly. He recognized that safety is sometimes given less than the top-priority spot it should have: "I've attended safety meetings and it's fairly typical that about the time the problem is identified, it's time to adjourn the meeting. We've found, too, that in some staff meetings safety was on the agenda but it was last—and thus its importance was diminished." He noted a number of things BN has done, to put safety where it should be.

It's BN's firm belief, Downing said, "that this is a joint effort between our employees and management. . .We worked on the theory that ideas are communicated and originated by getting people together, by gaining their active participation at every level and by impressing upon them that we have confidence in them and believe they can do the job. We listened to their ideas about how things could and should be done. The change was far beyond what we expected. It came about because we communicate on a person-to-person basis—seeking individual participation and expressing confidence in their ability to do the job. We recognized the need of the employee to be important and to be appreciated."

SAFETY AND EMPLOYEE RELATIONS

Bob Downing laid it on the line: "We cannot expect to achieve our safety goals if substantial numbers of our employees feel aggrieved about something else. Nor can we induce safe habits and attitudes through fear and the imposition of unduly harsh or frivolous discipline. A safe operation is not conducted in an atmosphere of hostility. Consequently, a safety program should not be launched with optimism unless it is accompanied by a sound and constructive labor-relations policy which is intelligently implemented by supervision at all levels." Downing hailed recent improvements in management/labor relations, as well as changes in union approaches. He promised BN's support. And in the NSC context he held this view: "We believe successful labor/management relations will bring a better—and safer—way of life for all of us."

Boyd: Revitalization in hiring, training

New blood for the railroads: That's what Illinois Central Gulf President Alan S. Boyd was talking about, to members of the Railroad Section of the National Transportation Apprenticeship and Training Conference at its recent annual meeting which was held in Chicago.

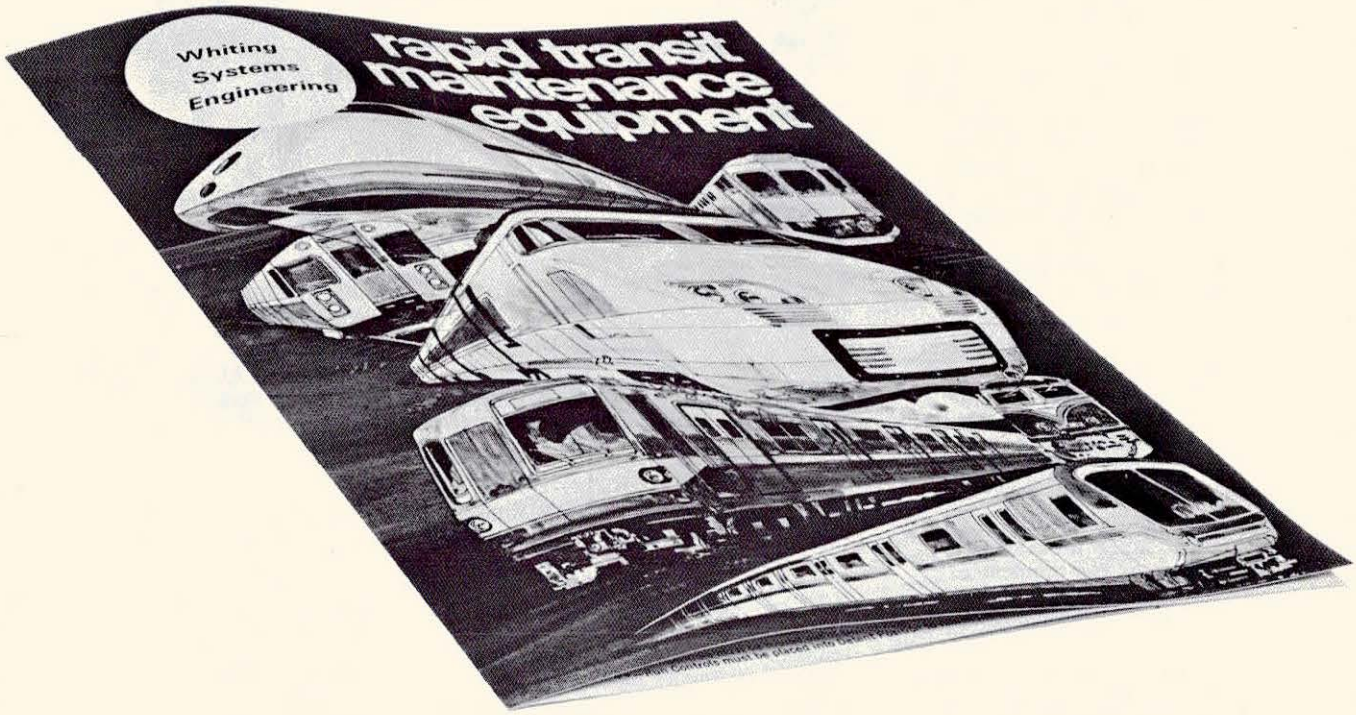
Boyd talked, for instance, of IC and ICG policies in hiring. He talked of the need for hiring "qualifiable" and not just "qualified" people: "We'll look for people we can qualify, not just those who have qualified themselves. And our ability to make someone qualified will depend, in many instances, on the level and effectiveness of our training effort. . .Our changes in hiring and training must be geared to help produce talented, useful people. For that, program changes alone are not enough. A much bigger change must come. What is needed is a change in attitude. . .We have to change emphasis. We can no longer tell young people to ask what they can do for their company, at least we can no longer tell them that first. First, we must tell them what they need to be for themselves. We must tell them that our first need from them is the certainty that they are persons, professionals and the proprietors of skills that they claim as individuals."

Under present conditions, Boyd noted, "We have little choice. . .We must provide the kind of jobs that young people will want. They must find experience and satisfaction on the railroad, and the reason is obvious: We need them more than they need us."

ICG's president also talked about new apprentice-training programs—and the scrapping of processes which were "disgustingly similar to [those] used in dog-obedience schools." A lengthy training period is still required. But, Boyd said, in the current three-year training period, "a young man is now assured of regular, formal training. He can get much of that training in a manner convenient to him. He can supplement on-the-job training with night school, day school or correspondence courses. The company will pay. But, one of the biggest changes is this: Any time after six months that an apprentice is able, he can do the work required for the job he is training for. He must, it is true, always do such work alongside a journeyman. But before, he had to wait until the fourth year of his apprenticeship."

And ICG's aim? "The environment we hope to create in training is fundamental to making young men want to become craftsmen."

Trouble Shooter's Guide



Whether you're planning a rapid transit system or already operating one, you should know how Whiting engineered inspection and repair systems can help you prevent trouble.

Whiting systems include equipment for hoisting, wheel spinning, exterior washing, plus moving, retarding and holding cars and trains. All equipment is engineered to your specific requirements — and all backed by Whiting's reputation for dependable, service-tested transportation maintenance systems.

It's all described in our new rapid transit "Trouble Shooter's Guide" which shows Whiting systems at work and tells how they can help you. Send for your copy.

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General Electric progress in

Parts centers, service shops, and field service forces form backbone of product service network

At General Electric's Transportation Systems Division, total service just begins with the sale . . . of its locomotives, transit and commuter cars, diesel engines and off-highway vehicle equipment.

GE's Transportation Industries Sales and Service Department, headquartered in Erie, Pennsylvania, maintains a complete national network of service facilities including regional distribution of transportation renewal parts, regional rebuild, repair and remanufacture of transportation equipment, and expert qualified transportation maintenance supporting services.

Fourteen General Electric Service Shops, specializing in transportation equipment repair and rebuilding, are strategically located throughout the United States. These shops are equipped to provide three kinds of fast, high quality repair service for major transportation components:

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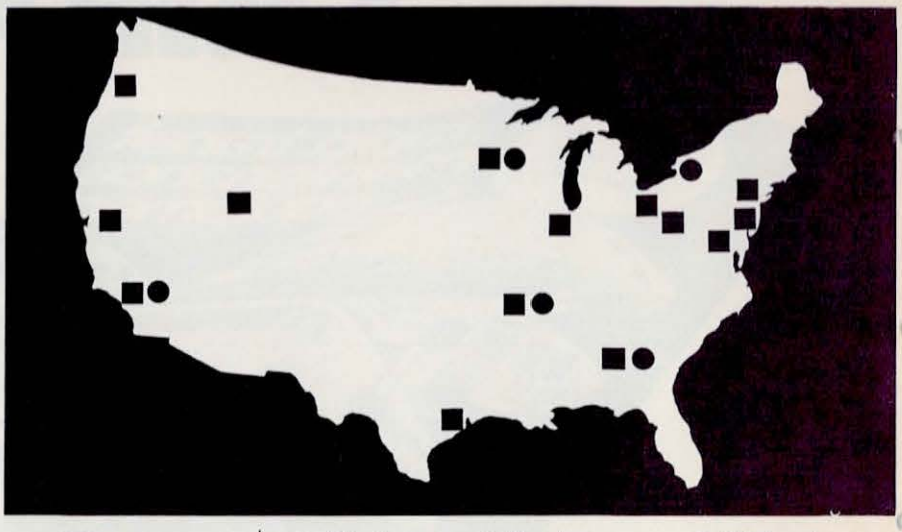
Complete repair and return . . . In this more comprehensive reconditioning, technicians inspect and repair or replace all parts necessary to restore the equipment to its original quality operating condition . . . and return it to the customer.



- GE Regional Parts Centers
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- •■ Atlanta
- ■ Baltimore
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Unit exchange . . . A General Electric "total service" concept whereby a customer may receive immediate delivery of totally rebuilt and fully warranted equipment. Under this program, GE service locations stock items which have undergone complete overhaul. When a phone order comes from a customer, the item, such as a traction motor, is immediately shipped from existing GE stock. The customer then forwards his equipment to GE.

GE's strategically located centers are staffed by transportation renewal parts sales engineers who give valuable on-the-spot, personalized customer assistance throughout equipment service life and assure timely shipment of renewal parts and components.

Computer analysis of stock supply, scheduled maintenance orders, and projected demand, provides a vital link between Regional Parts Centers and the Transportation Renewal Parts Distribution Center in Erie, Pennsylvania.

Prompt parts availability from five Regional Centers

Strategically located in Atlanta, Erie, Los Angeles, Minneapolis and St. Louis, GE Regional Parts Centers not only provide key parts but also serve as a continuous interface between the customer and the factory.

Utilizing the latest in computer analysis techniques to project demand for replacement parts, they provide invaluable 24-hour-a-day, seven-day-a-week service to assure prompt delivery. The result: further assurance of prompt customer service, helping maintain maximum "in revenue service time" for GE transportation equipment. Whether it is a replacement part, assembled component or Unit Exchange item, it is available from a stock of thousands of items.

Any item stocked by a GE Regional Parts Center can be delivered anywhere in the United States within 24 hours.

In addition to immediate parts service, a Customer Service Specialist is assigned to each of GE's land transportation customers to see that his needs are met with the right parts, at the right place, at the right time.

transportation service

General Electric transportation systems
ERIE, PENNSYLVANIA 16501

New GE Parts Distribution Center geared to serve customers' needs promptly

Whether it's a tiny cotter key weighing a fraction of an ounce, or a 3-ton diesel engine, GE's modern Transportation Renewal Parts Distribution Center in Erie, Pa., has it, or can get it in a hurry to meet customer service needs.

GE's new $4.5 million Transportation Renewal Parts Distribution Center contains 150,000 sq. ft. of storage and operating space and is equipped to move more than 24,000 stock locomotive, transit and commuter car, and off-highway vehicle parts with modern, automated equipment.

A new stacker crane has been installed to speed handling of parts shipments to Regional Parts Centers, and therefore, to customers.

Under GE's new Scheduled Orders Program, when a customer itemizes the parts he needs for routine maintenance the Center's computer tracks the schedule and automatically sends the parts out on schedule during the year. Scheduled maintenance helps keep locomotives and transit cars available for revenue service.

GE's five Regional Parts Centers receive appropriate stock items from the Erie Distribution Center while an additional 90,000 parts are available on an as-required basis to take care of more infrequent customer needs.

Technical assistance always nearby

GE's land transportation customers are supported by more than 80 experienced transportation installation and service engineers located throughout the United States.

Customers find that knowledgeable, technical assistance is always nearby. The out-of-service transit car or locomotive is never very far from GE's reliable transportation service engineering support.

Grove City facility cuts customer maintenance costs by remanufacturing diesel engines

General Electric's after-sales service includes a complete new diesel engine remanufacturing facility at Grove City, Pa.

Under complete or limited repair, and Unit Exchange programs, the new Grove City Diesel Engine Remanufacturing facility provides customers with new engine quality and performance through economical rebuild and modernization.

All engine components are cleaned, renewed to the latest design or specification, or replaced. After reassembly, the engine undergoes a comprehensive test program, including engine break-in and tuning of the fuel injection system. This is followed by a four-hour full power test run. Comprehensive crankcase and external inspections are made both during and after testing.

Unit Exchange engines are given a warranty of 12 months of service, or 100,000 miles.

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QUALITY...SERVICE...VALUE

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After sales service... a vital link in transportation progress

GE's Transportation Industries Sales and Service Dept. is committed to providing its customers with Best Buys in quality, service and value for whatever their needs . . . new locomotives, transit cars, off-highway drives, high-quality repair or exchange components, highly qualified service engineers, and a full range of replacement parts. We're backing our commitment to total customer service with investments in people and facilities dedicated to helping our customers provide more efficient land transportation services.

Norman W. Seip
General Manager
Transportation
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Transportation Systems Division
Erie, Pennsylvania 16501

GENERAL ELECTRIC

Circle 9 on coupon page 33

Photos courtesy Rohr Corporation and Bay Area Rapid Transit District

Vapor Door Operators "fit in" With BART's New Technology For Rapid Transit Cars

The Vapor Dor-Trol door operator is just one of the many components that meets performance requirements and makes the BART car the fine car that it is. Designed to fit, Vapor's lightweight door operator package fits like it belongs because it was engineered to meet interior and exterior aesthetics of the BART car. This Vapor slim-line door operator, mounted in the walls, off the floor, offers greater reliability and easy accessibility for inspection. Unseen and quiet, people riding in the car never know it's there. But it functions for their safety, keeping the doors closed while cars are in motion, automatically opening the doors when the cars have stopped. Interfaced with BART's automated train operation, Vapor's sensitive edge interrupts the door closing cycle if the door panel is halted by a passenger's hand or foot. To minimize train delay in the station, this Vapor approach provides a gentle pulsing action that alerts passengers who block doorways.

These are just a few of the "advance concept" product ideas Vapor has developed in conjunction with transit authorities, consulting engineers and car builders.

Vapor Corporation has total capability to provide complete door operating and signal control systems as well as speed indicating, air comfort control and heating equipment for your transit, railroad, commuter cars or public transportation vehicles.

Vapor Corporation also designs, develops and manufactures electronic, electromechanical and pneumatic products to meet the high standards of reliability and performance demanded by today's transportation systems.

For information contact the Transportation Systems Division, Vapor Corporation, 6420 West Howard Street, Chicago, Illinois 60648. In Canada, Vapor Canada Limited.

VAPOR CORPORATION

Circle 10 on coupon page 33

Moving People

CTA BID OPENING RESCHEDULED FOR NOV. 30

Opening of bids for 100 new Chicago Transit Authority cars, originally scheduled to take place Oct. 12, and then postponed when one of the bidders sought and was granted an extension, has been rescheduled for Nov. 30. Of the 13 companies and organizations that requested car specifications, only two are now expected to be serious bidders—General Electric and Boeing. Early estimates of the cost of the 100 cars are set at about $22,230,000.

ROHR, BELGIAN FIRM SIGN LICENSING PACT

A licensing agreement between Rohr Industries and Belgium's leading rail car builder, La Brugeoise et Nivelles S.A., will result in the eventual appearance of Rohr-designed cars on Brussels' new rapid transit system. The Belgian firm has been awarded a 58-car contract, the initial one for the new system. Aside from providing technical assistance for the construction of the aluminum cars, Rohr will build and test two prototypes at its Chula Vista, Calif., plant. Rohr says no timetable has been established yet for assembly and testing of the prototypes.

SP WOULD RAISE COMMUTER FARES

Southern Pacific's 11,000 San Francisco Peninsula commuters are being asked to pay higher fares—but the increases proposed will still make up only a small part of SP's losses on the service. Increases on monthly tickets would range from 6% to 12% but even with these boosts, SP says, its commuters would be paying less for comparable distances than riders on Peninsula buses, BART trains or commuter trains in other major cities. SP estimates that the increases would produce $458,000 in additional revenue, or less than one-fifth of the $2.5-million annual loss now being recorded.

D.C. METRO SELLS $225 MILLION OF BONDS

An investment syndicate has purchased $225 million of Federally-guaranteed 40-year transit bonds from the Washington, D.C., Metro. The syndicate was headed by Merrill Lynch, Pierce, Fenner & Smith. Eventually, Metro plans to sell a total of $1.2 billion of such bonds to finance about 40% of the $2.98-billion cost of its 98-mile rapid rail transit system, which is due to be completed by the end of 1979.

MBTA TO PURCHASE PC RIGHTS-OF-WAY

Directors of the Massachusetts Bay Transportation Authority have authorized the MBTA general manager to file a $19.5-million revised advance land acquisition loan application with the Urban Mass Transportation Administration. The funds would be used to purchase 145 miles of Penn Central rights-of-way in Massachusetts for immediate and future use for mass transportation purposes.

UMTA GRANTS $22.5 MILLION FOR BALTIMORE

The Urban Mass Transportation Administration has granted $22.5 million to the Maryland Transportation Department to help begin work on a 28-mile, 20-station rail transit system in Baltimore. The grant will pay for two-thirds of building 10 stations; constructing some track; some engineering, design and land-acquisition and related work. The other third will be provided by Maryland. The project is scheduled for completion by 1980 at an approximate cost of $656 million. The state DOT is expected to apply for additional Federal funding, bringing the total to $437 million, which will cover two-thirds of the project's costs.

MORGANTOWN PRT SYSTEM DEDICATED

The controversial Morgantown, W. Va., Personal Rapid Transit System (PRT) won't be ready for revenue service until late 1974—but DOT Secretary John A. Volpe went to Morgantown Oct. 24 to dedicate the system and to talk about the "high priority President Nixon has given to programs designed to solve the pressing problems of the nation's cities." DOT said the ribbon-cutting signaled activation of the first mile of the 2.2-mile guideway, on which testing will start immediately. By the time testing is completed in mid-1973, DOT will have invested $43.7 million in the Morgantown system—and additional money will be required to provide the number of cars and allied equipment necessary for full service. DOT notes that the PRT "is not intended to take over to any major degree the functions of existing transportation modes. It is designed rather as a distribution system in central cities." DOT last month approved an $11-million grant for the beginning of a similar project in Denver.

TWIN CITIES REVIEWS TRANSIT PLAN

It looks like a long wait is in store for those among 1.9 million Twin Cities-area residents who wish to see rail rapid transit come their way. In a transportation plan prepared by the area's Metropolitan Council for a public hearing last week in St. Paul, the long-range program for transit development calls for the initial appearance—may be—of a new transit vehicle system sometime after 1980. In the period 1975-1980, the area would see "about 58 miles of exclusive right of way for express bus or automated transit vehicle right of way" under development, according to the plan.

13 MYTHS HOLDING BACK

By JOE ASHER

1 **Most North American cities are too small for rail transit.**

FACT: In 1954, Toronto got its rapid transit system when the city's population was less than 700,000. In 1955, Cleveland got its system when the population was less than 900,000. Both systems have carried tens of thousands of riders daily ever since; both had to be expanded as the metropolitan areas grew.

Disregarding the dozens of foreign cities with populations over one million that have opted for rapid transit since World War II, the following cities overseas in the 500,000 to one million population range have added rail transit systems since 1950: Stockholm, Oslo, Lisbon, Munich, Cologne, Frankfurt, Rotterdam, Milan, Nagoya, Kobe, Baku, Kharkov and Tbilisi. (Some have crossed the million mark since.) Others in the same size range that are authorized and planned are in Liverpool, Yokohama and Helsinki (the latter under 500,000).

Back in our own country, Boston built its prewar lines long before the population reached one million.

2 **Rail transit is declining—and will soon fade away.**

FACT: Since World War II, 40 cities around the world have elected to build brand new rail transit systems—a dozen of them in just the past 10 years. The newest ones in North America are San Francisco's BART (opened two months ago); Philadelphia's PATCO (opened 1969); Mexico City (1970); and Montreal (1966).

Under construction are two more systems—in Washington, D.C. and Atlanta. Others are in the planning stage in Baltimore and Buffalo. Still other cities with active proposals are Los Angeles, Seattle, St. Louis and Pittsburgh (the latter an unconventional system).

Total transit ridership in the U.S. *has* declined since World War II—from 19 million to 5.5 million riders. But the great bulk of that decline was in bus and trolley, not rail transit ridership. The rail transit drop-off was 40%; the drop-off for all transit modes was 71%.

However, on new rail transit systems such as Montreal, Toronto and PATCO, where better looking stations and more modern cars have a chance to make their appeal, the trend in riding is up. And if the new rail transit systems overseas are counted in, the over-all trend, is way, way up.

3 **Rail transit is unsexy—it has no winning mystique to appeal to riders.**

FACT: When the best in modern graphics, visual design and technology are applied to new transit cars and stations, the public *does* go for them. When the BART car was unveiled, in the San Francisco Bay Area, it was widely acclaimed. Montreal's new stations got the same reaction. Both won awards from design groups with no special axe to grind for transit.

Less spectacular-looking but certainly handsome are other new cars—the PATCO cars, the Long Island Metropolitans, the PATH cars and others. The old idea is dying that transit cars are people-boxes, and transit stations look like hospital corridors. The newer systems show bright colors, more open space and better pedestrian flow in stations; smoother rides, more personal comfort and (usually) air conditioning in the cars.

4 **The public won't tax itself to build new systems.**

FACT: But it has. The San Francisco Bay Area voters did it in 1962 to build the BART system. The Boston-area voters did it in 1964 to create the Massachusetts Bay Transportation Authority, which built the South Shore line, and has others under construction.

New York State voters did it in 1967 to build a Second Ave. subway in New York City (for which ground was just broken) and for miscellaneous improvements around the state. And Atlanta voters used the ballot box last year to approve construction of a new rapid transit system.

Not every campaign to rouse the voters has succeeded. Bond issues for transit went down to defeat in Seattle and Los Angeles. But detailed plans exist, new financing packages are being explored, and there is reason to believe the next round will go better.

It's a matter of record that the public *will* tax itself to support transit. And it's worth repeating that matching public funds swell the sum the voters raise by a considerable amount.

5 **People won't leave their cars to ride trains.**

FACT: It's a common sight to see parking lots at outlying transit stations jammed to capacity during weekdays. But three case histories are especially telling.

RAIL TRANSIT

In 1955, the Cleveland Transit System started rail service from scratch. The tracks were inherited from a long-haul line, so the downtown distribution layout was less than ideal. Predictions were that CTS went to all the wrong places and wouldn't get any business. In fact, CTS drew thousands of riders, some driving as much as 40 miles to park at a CTS station and ride the Rapid downtown. CTS' Rapid line averages 45,000 riders daily.

In 1962, the Chicago Transit Authority refurbished an old interurban line to Skokie, Ill., hooked it into the CTA system and began offering fast, frequent service downtown with spruced-up but quite ordinary vehicles. Demand for the service exceeded the wildest expectations, and the Skokie line turned into a big generator of CTA traffic.

In 1969, the PATCO line from the south New Jersey suburbs to Philadelphia started service. Traffic climbed steadily and now averages around 40,000 riders daily. Parking lots holding 8000 automobiles at outlying stations are routinely filled to capacity. An early estimate was that 40% of the PATCO traffic consisted of ex-auto commuters. It's probably far higher now.

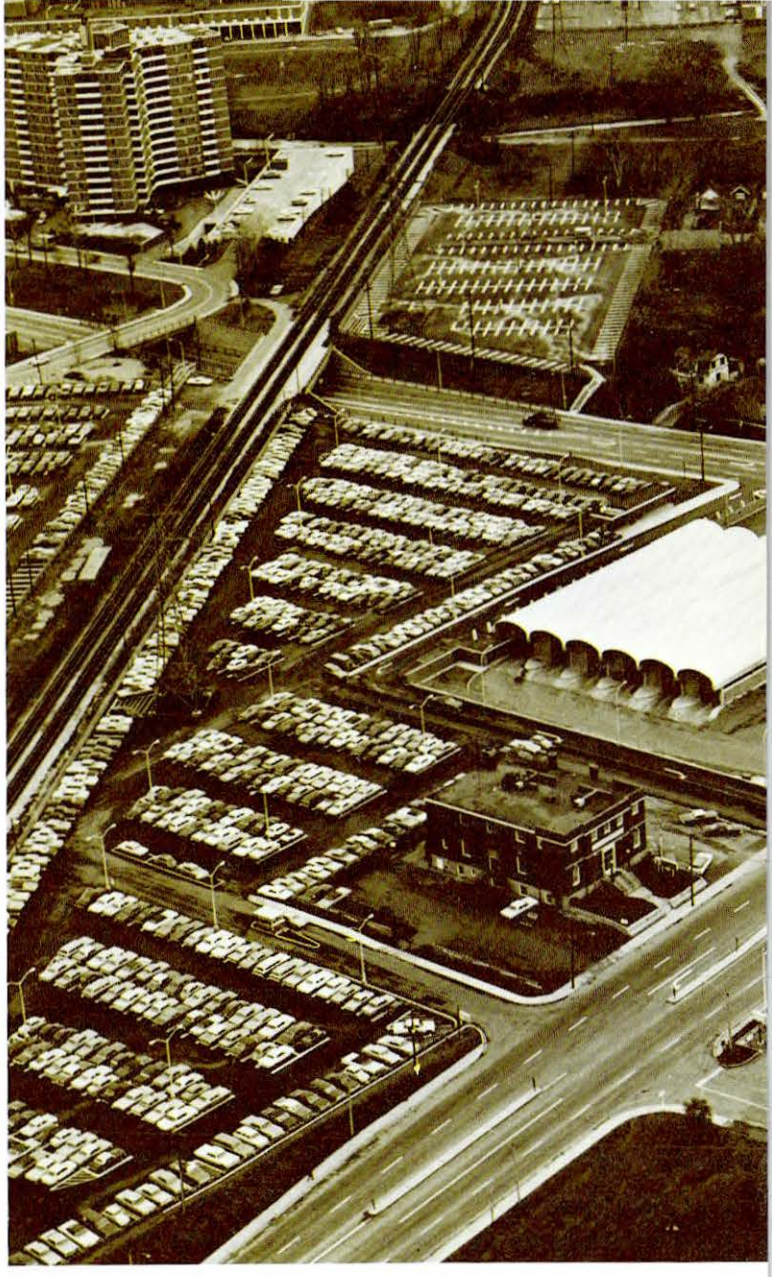
6 **Transit lines are a blight on the landscape.**

FACT: New-type transit lines are the precise opposite of a blight. They take up far less space than the eight-lane highway (and its clover leaves and turnouts) that would otherwise have to do the job. And technical advances in noise control and concrete pier construction make transit lines far easier on the eyes and ears than the old-fashioned Third Ave. El. Graceful aerial and surface lines such as those of San Francisco's BART, Philadelphia's PATCO, and Toronto's TTC make minimal interference with the environment, with sunlight, and with cross traffic.

What's more, when transit lines are put in median strips of highways, as on parts of the Chicago Transit Authority and BART, they create a concentrated traffic corridor that chews up an absolute minimum of real estate.

7 **Transit's sky-high construction costs make it just too impractical.**

FACT: Per-mile construction costs of $20 million or $25 million or more are admittedly high. But that's because rail transit goes over or under the most expensive real estate—in the big cities and their suburbs. New highways in the



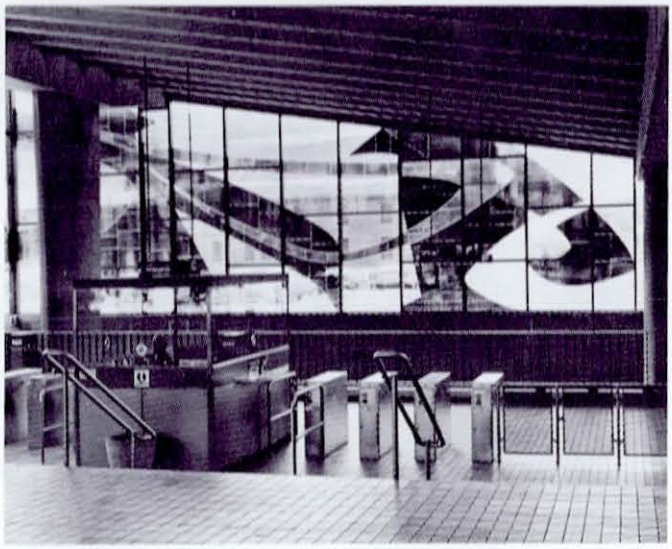
TORONTO
People won't leave their autos to ride trains?

BART
Blight on the landscape?

same areas can cost far more—figures $60 million to $80 million a mile have been registered.

Rail transit is cheap at the price because it moves people far more efficiently: up to 50,000 per hour, compared to 4,000 per hour for each lane of highway. And rail transit cuts the amount of downtown land that must be diverted to parking use; it reduces the number of policemen diverted to traffic duties; it eases congestion for those who remain on the streets and highways.

And transit has proved time and again to be a builder of real estate values. When a rail transit line goes in, new construction mushrooms around the stations. Higher tax assessments return money to the community, often enough to pay the first cost of building the line. This is not conjecture: Toronto credits its subway line with $10 billion in new construction adjoining the subway. San Francisco's Market St. was rejuvenated to the tune of $1 billion in new construction even before the BART system opened.



TORONTO
Stations that look like hospital corridors?

8 **Express buses can do the job a whole lot better than transit trains.**

FACT: Express buses have definite value in certain applications. The first cost of a bus is far less than that of a rapid transit car; the first cost of converting a highway lane to express bus use is infinitely less than that of building a transit track from scratch, installing signaling, etc. Add to that the operating flexibility of a bus (it goes anywhere) and the combination seems hard to beat.

But there are other costs besides first costs. Each bus requires a driver, whereas a long string of transit cars accommodating far more riders requires just a motorman and possibly one attendant. Operating costs take off for the stratosphere when labor-intensive buses come into the picture.

Another drawback is that express buses are no different from other buses when it comes to polluting the air.

They also suffer from a fish-or-fowl identity crisis over that term "express." In some cases, what are called express buses are just non-stop buses over longer distances than the normal city bus. They're subject to the same delays on congested streets and highways as any normal bus—so the term express is doubtful. In other uses—on their own separate street and highway lanes, running in tandem or almost in tandem—they really are express. But that's because they start to take on the character of—you guessed it—a train.

9 **That talk about Federal money for transit is just talk.**

FACT: Twelve years ago, there was *no* Federal transit aid. Since the Kennedy Administration and under all succeeding administrations, funds for transit have steadily grown. Congress authorized expenditure of $12 billion over the twelve-year period 1970-82 for mass transit. Specific obligations cover $3.1 billion for the first five-year period. Federal aid is currently running at $1 billion annually for matching capital grants to aid construction, plus research, development and demonstration grants for new approaches.

In view of high transit operating deficits and the inability of local communities to finance new projects easily, the level of Federal aid is still considered too low. Efforts to get Congress to approve transit operating subsidies and/or to tap the Highway Trust Fund have still not been successful. But it's considered a sign of the times that they were only narrowly defeated; a decade ago such measures would not have gotten a serious look.

Presidents Kennedy, Johnson and Nixon all formally endorsed the idea of supporting mass transit. Congress is increasingly favorable to the cause. The chances for still more Federal aid are better than ever.

10 **Ecology consciousness is a fad that will pass.**

FACT: That's what they told Teddy Roosevelt when he fought the lumber companies 70 years ago to give this country its national parks.

Ecology is no fad—witness the hundreds of millions of dollars being spent on environmental controls by utilities, steel, aluminum, oil and chemical companies. With all that money invested, public standards are not about to sink into a rut, if and when the current mood runs its course.

Rail transit figures prominently in the minds of environmentalists for obvious reasons: Rail transit cars give off no smoke, create no gas exhaust. When they're underground, they leave living neighborhoods alone. When they're over ground, they take

MONTREAL
Transit does nothing for real estate values?

up far less space than equivalent-capacity highway lanes.

Just to give one example, The Skokie Swift operation of the Chicago Transit Authority showed a 13% reduction in hydrocarbons because of a reduction of approximately 2,000 automobile trips per day.

11 Public transport should pay its own way.

FACT: Urban public transport has rarely if ever paid its own way—the farebox just won't support it. But the current attitude is to look on it as a municipal or regional utility, just like police, fire-fighting forces, sewers, etc. These are essential functions that keep everything else going.

In Europe, it's established policy that public transport agencies get subsidies just like other utilities. This holds as true for France, Britain, West Germany and Sweden as it does for Russia. It has nothing to do with the type of political system.

12 U.S. urban traffic problems are different from those of other countries; we have far more automobiles and our suburbs are more spread out.

FACT: Bunk. It was precisely with the rise of affluence in postwar Europe and the growing use of the automobile that decisions were made in dozens of European cities to go all out for rail transit. The fear was that automobiles would soon swamp their narrow streets and destroy historic downtowns as viable centers. It was *not* intended to discourage buying automobiles. It *was* intended to discourage people from driving downtown to work. So there were parallel trends—a fast-growing automobile population, and rapid transit construction going on in almost every European city of any size. This, by the way, also holds true for post-war Japan.

13 Exotic systems will soon make rail transit obsolete.

FACT: Tracked air-cushion vehicles going 250 or 300 mph on local or commuter runs are as preposterous as taking a Boeing 747 from New York to Jersey City. It's economic overkill.

Vertical take-off and landing vehicles, monorails and the new people-movers all have value in specific applications. But the applications will seldom if ever be those for which rail transit is needed—high-volume movements of people to and from work in cities every weekday.

VTOL was a hot item a few years back. People soon shied away from the idea of hundreds of noisy choppers blacking out the sky, hovering over office buildings.

Then there were monorails. Perfectly worthy in their way, the vehicles were nothing like the Sunday-supplement vision. They're generally quite slow, and poor switching adaptability combined with only middling vehicle stability make this vehicle better adapted for city-to-airport or in-airport applications, not mass transit.

People-movers? Some are really monorails. Others are more like electronic taxis. They have their uses. But vehicle capacity is inherently low—eight to 40 riders, compared to 80 to 200 riders for rapid transit/commuter vehicles. Construction costs for putting people-movers underground would not be much lower than for rail transit. If people-movers are put on aerial lines, their low capacity dictates dozens of lines going down dozens of streets—something not many neighborhoods care to contemplate. The design goal of today is to consolidate utility corridors, not multiply them. ■

Richmond
El Cerrito Del Norte
El Cerrito Plaza
North Berkeley
Berkeley
Ashby
Concord
Pleasant Hill
Walnut Creek
Lafayette
Orinda
Rockridge
MacArthur
19th St Oakland
Oakland City Center– 12th St
Oakland West
Lake Merritt
Embarcadero
Mongomery St.
Powell St.
Civic Center
Fruitvale
Coliseum
16th St Mission
24th St Mission
San Leandro
Bay Fair
Glen Park
Balboa Park
Hayward
Daly City
South Hayward
Union City
Fremont

BART's first fifty days

Since Sept. 11, when BART opened the first 28 miles of its 75-mile system, the eyes of the transit world have been fixed on Oakland, Calif. If BART succeeds, other new systems could sweep in on its coattails. If it fails, the cause of transit could be set back. Nearly two months after the first train ran, Railway Age talked with General Manager B.R. Stokes.

How does ridership so far compare with your pre-service forecasts?
STOKES: We have achieved about 95% of our projected patronage for the '72-'73 fiscal year—but that 95% has been achieved on a shortened operating day, 6 a.m. to 8 p.m., and on a five-day week, while our projection was based on a 5 a.m. to 1 a.m. operating day and a seven-day week. Average daily ridership has been about 17,000. Our heaviest day was Monday, Veterans Day, Oct. 23, which coincided with the parade in downtown Oakland for the Oakland A's, when we carried 30,000 people.

How many of your riders are commuters?
STOKES: We're in the process of hooking up a data system which will give us daily counts at all of our turnstiles. For the moment all we can do is manually count at the maximum load point here at Lake Merritt station. On that basis, we began in the first week with about 1,400 commuters a day and that number has risen now to at least 2,500.

How are your cars performing?
STOKES: Better, I think, than we probably had any reason to expect, in view of the rather limited time we had to put hours and miles on the cars prior to the time we went into revenue service. But we are still experiencing trouble off and on on a daily basis, due primarily, we believe, to the usual phenomenon of infant mortality which you get with some of the components of electronic equipment.

"We have done somewhat better than we really expected we would do"
General Manager Stokes

A national magazine reported that BART was "off to a shaky start" and said the Westinghouse Electric automatic control system was still shot through with defects. What, in fact, is the situation?
STOKES: We opened on full automatic operation on Sept. 11, and the percentage has been at least 99% automatic operation since that time. Again, we have experienced wayside problems and carborne problems due primarily to this phenomenon of infant mortality in electronic components and to the fact that many of these things don't uncover themselves until you've gotten miles and hours of operation. But generally speaking, we have done somewhat better in terms of our problems than any of us really expected we would do. Having said that, I will still say that we are having problems.

What were the effects of your Oct. 2 derailment on ridership?
STOKES: Strangely enough, the accident seemed not only not to deter patronage, but there was increased patronage on the day following. We had no diminution in ridership on Oct. 2. On Oct. 3, there was actually an increase. Certainly there has been no decrease as a result of the accident. When the Oakland A's were playing their World Series games here at 6 o'clock in the afternoon—which more or less coincided with the anticipated heavy southbound highway rush on Nimitz Freeway—we were asked to help. On those days we had daily ridership in the range of 23,000 to 24,000 people per day, which was considerably over anything we had carried before. This indicated that the general public had not been affected by the accident.

What has the inquiry developed as to the probable cause of the derailment?
STOKES: It was caused by a defective crystal oscillator. We found it by X-rays in our own shop as we went through that car circuit by circuit and switch by switch and relay by relay. We found that the oscillator was mounted improperly inside its case and that it had, in fact, received the proper signal to slow down to a speed of 27 miles an hour but because of its defective mounting transmitted to the carborne equipment a speed command of 70 miles an hour. We have determined conclusively that this was the cause. We ran checks with that same crystal; we got the same results. We have determined on a number of different bases that the brakes worked properly and did apply properly once the emergency stop was pressed. As a result of our findings, we're taking additional steps now in terms of our own testing. The Westinghouse Electric people are instituting more rigorous quality control tests in terms of the components which they supply to us. Of course, a crystal failure is one of those one-in-a-million things that nobody even considers because of the proven reliability of these crystals in various applications over many years.

What is your present timetable for opening the remaining segments of BART?
STOKES: I have just reported to the board that the schedule for the remain-

◀ Fremont line is now in operation. Timetable calls for opening Richmond line in mid-January, Concord in May, Daly City in September.

ing lines will be as follows: mid-January for the Richmond line; May for the Concord line; and September for the full service operation through San Francisco as far as Daly City. This differs from the schedule we had set earlier, for three reasons: one, our inability to hire our own personnel as a result of an arbitration ruling; two, our involvement in clearing up the Oct. 2 accident, which required District personnel as well as Westinghouse personnel, and as a part of that the additional hours of testing that we have now instituted on our own equipment; and three, the necessity to make modifications to certain of the wayside equipment supplied by Westinghouse for the remaining lines, the need for which came to light as a result of our revenue operations.

When will you extend your hours and days of operation?
STOKES: We think priority should be placed on getting additional lines in service. And we barely have enough personnel to handle the things we are doing now. As a matter of fact, we have had a lot of operations and maintenance people working very long hours of overtime, due to the fact that we still don't have as many as 175 people we should have had on board by August. Because of the lack of personnel, because of additional testing, because of the requirement that we make maximum use of our track availability during the off hours for testing, for maintenance, and for car acceptance work, as well as training new train attendants—for all these reasons, we decided that opening for additional hours or additional days just had to be a second priority to the opening of additional lines.

Most cities with change-making machines have experienced a high rate of failure. What is BART's experience?
STOKES: This has been as big a problem as we have had in terms of all of our automatic fare collection equipment. I understand that we have experienced about 150 failures a month with our 43 change-makers. In addition to these failures, the machines sometimes fail to return the proper amount of change; we know this because the machines do not always balance at the end of the day.

How about your computerized turnstiles?
STOKES: They are operating well under the one-failure-per-machine-per-month guarantee. We have had one case of a demagnetized ticket, but no other major problems.

Your various automatic fare collection machines look and sound pretty complicated. Have people learned to use them without great difficulty?
STOKES: Yes. Telling people how to

17,000 RIDERS A DAY, including a rising number of commuters, now use Fremont line. Peak load

"When all of those robots work together,

By HARRE DEMORO

OAKLAND

The commuter train I've been waiting for since 1962 finally rumbled into the Fruitvale station last September.

That train has been a long time coming. While I waited a decade for it to arrive, I rode all of the subways in the Soviet Union. I stood on a platform under Lexington Avenue and was appalled at New York's IRT. And I rode under Market and Broad streets in Philadelphia and prayed BART would not turn out like that.

My hopes were buoyed by a ride to Lindenwold on PATCO. And I felt a lot better when, last spring, I was allowed to run BART car 107 at better than 80 miles an hour through southern Alameda County during the testing, and before the automatic train control ended such fun.

When my first BART train finally did come 'round the bend, it did so almost silently. No clanging and banging so typical of New York and Philadelphia, and even evident in Moscow and Leningrad. No hissing of air brakes or from opening doors.

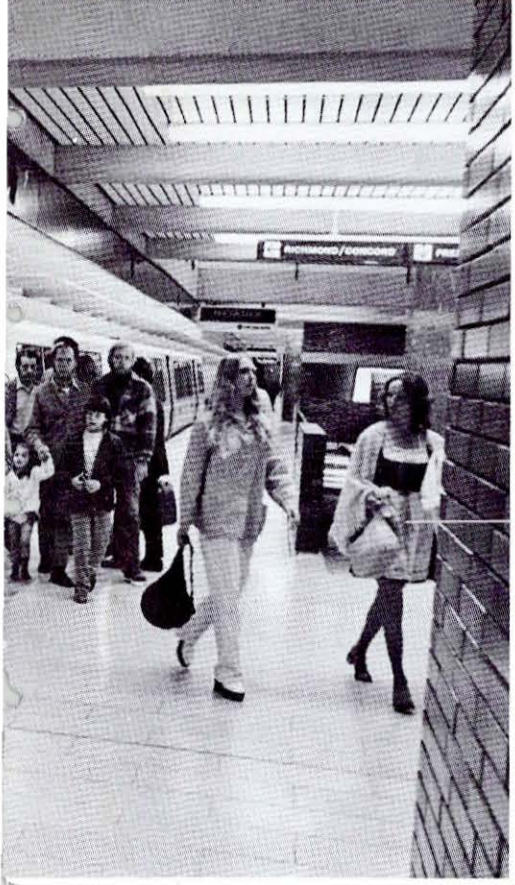
Almost every morning since Sept. 12, the first day of commuter-hour operations, I've boarded, for better or worse, the silvery BART trains. At times, my five-minute journey to Oakland City Center Station under Broadway at 12th Street is fast, smooth and comfortable. But that occurs only when everything works. And getting all of those robots to cooperate all the time is a feat BART's experts have yet to accomplish, although they seem to be edging slowly toward that goal.

Fare collection, a simple procedure on almost every system, is complex on BART.

Not long after the railroad opened, I was shuttled to the Fruitvale station by a middle-aged but willing AC Transit bus, and deposited a few feet from the battery of "fare gates," the space age word BART has adopted for turnstiles.

The station agent, until that morning, was a smiling fellow who greeted me with an enthusiastic wave.

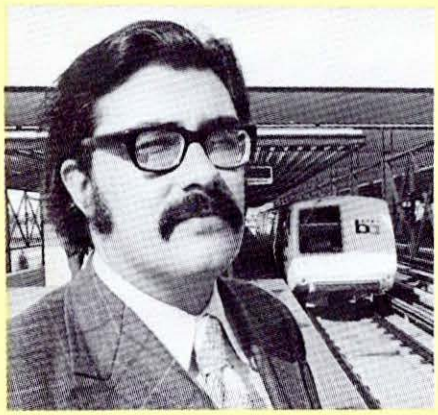
I inserted my ticket into the mouth of the gate. Nothing happened. My ticket disappeared. The agent unlocked the contraption and we both peered into the innards of the gate. The agent's smile returned, for a moment, as he found my $3 ticket in the electronic maze. His grin faded when we both discovered there was almost nothing left of the ticket. The machine had tried to eat it. While all of this was occurring, my train pulled into the station, unloaded and loaded, and left, its horn beeping. I caught the next train.



was 30,000 on Veterans Day.

ELECTRONIC FARE COLLECTION, says Stokes, is harder to explain than to operate.

the ride is fast and smooth"



BART BUFF Demoro is also a reporter for the Oakland Tribune.

Since then, the agent cringes when he sees me approach.

A few days later, I rushed from the office to the 12th Street stop, hopeful of buying a weekly supply of fares, but I heard the woman in line ahead of me muttering in most unladylike terms. The machine was rejecting dollar bills as fast as she was inserting them. As she struggled, our train rolled into the station and left without us.

I boarded the next train and enjoyed a smooth, five-minute run to Fruitvale, where I had to wait 40 minutes for a bus.

One of the more dramatic commuting events occurred one morning two weeks ago when a two-car train, its electronic brain obviously asleep, sailed right through the Lake Merritt Station at 37 miles an hour. What made the run-through memorable was that BART General Manager B.R. Stokes was on the platform and waving while he shouted: "Hit the stop button."

Most commuters, myself included, are learning. We have yet to get in the habit of standing along the platform rather than in a bunch at approximately where the front of the train will be at a station stop. But most of us have realized that walking from one car to another to find a seat is not nearly as difficult as it is on other systems. In New York, for example, you actually walk across open space between the cars and those safety chains clattering against the metal aren't much help.

BART, true to the dreams of the publicists, is to provide a seat for every passenger. Except around doors—exactly where passengers are not supposed to stand—there are no hand-holds. So, one tries to hold onto the ceiling, or grab the useless handle attached to the end of the seat. Standing commuters are learning togetherness in a new way aboard crowded trains accelerating at three miles per hour per second.

While we have no straphangers here, we have a generation of riders leaving their finger and palm prints on the ceiling.

There is mounting evidence things are settling down.

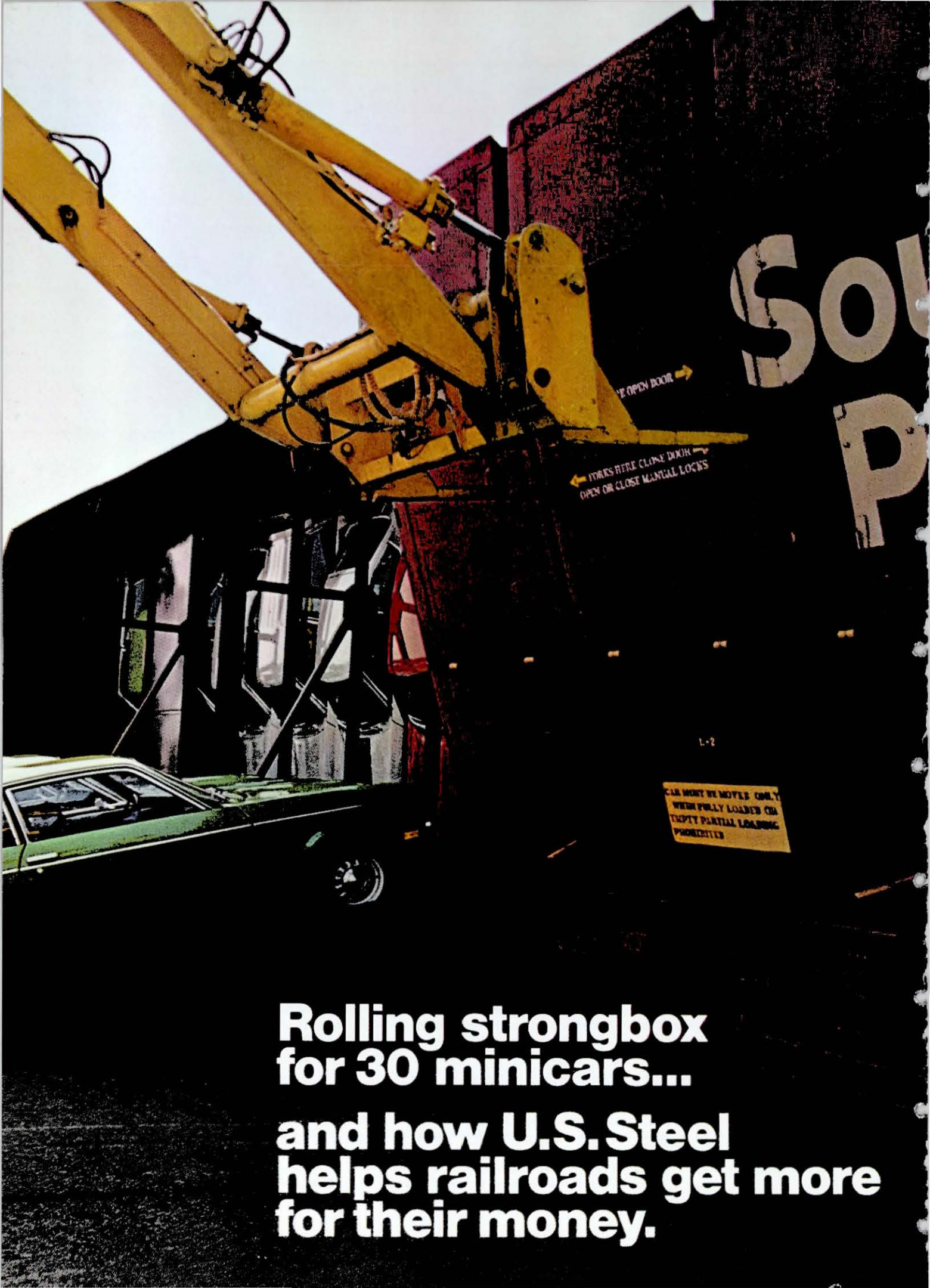
Only a few days ago all electronic train destination signs were working.

Some commuters have developed the "subway stare," a malady previously unknown on the Pacific slope.

A generation of train watchers is evolving. They gather and peer through the cab door window, not suspecting that in a few weeks a shade will forever bar their view of the speedometer and speed code light.

The only sane way to view riding BART today is to consider it a rare adventure, an experience soon to be lost as the railroad goes into full operation and the going becomes routine.

Delays that would enrage the faithful aboard the Penn Central and Long Island are, for the moment, typically viewed as footnotes in the pioneering of a new system. At the very least, such delays are considered a more comfortable, if not snobbish, way of wasting time compared to sitting in the jammed Nimitz Freeway. The highway and its congestion is in full view of commuters on trains scooting over the East 12th Street elevated tracks.



Rolling strongbox for 30 minicars...

and how U.S. Steel helps railroads get more for their money.

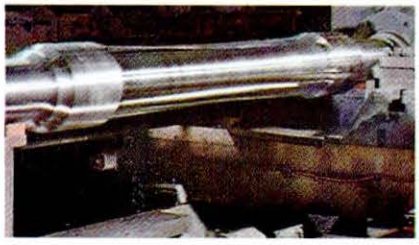
This giant freight car, Vert-a-Pac, hauls 30 little autos in scarcely more space than the usual tri-level rack car needs for 12 of standard size.

Southern Pacific and a major auto maker developed the 18-foot-high car to carry the 14-foot-long autos in a revolutionary position: nose-down on walls that also serve as loading ramps.

To cut the weight of this rolling strongbox (Vert-a-Pac is virtually vandal-proof and dirt-proof) the designers chose USS COR-TEN A Steel. This high-strength, low-alloy steel is 40 per cent stronger than carbon steel, has 5 to 8 times the resistance to atmospheric corrosion and gives twice the paint life.

It's used in the built-up center sill of the basic flat car (prime contractor: ACF Industries) and in the above-deck auto housing (subcontractor: St. Louis Car Division, General Steel Industries, Inc.). We're supplying steel—and good advice—on a lot of other projects important to the railroads: cars, rails, bridges, buildings.

If you'd like to talk, phone your USS man or write United States Steel, Box 86, Dept. 7394, Pittsburgh, Pennsylvania 15230.



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Stronger wheels for bigger loads. To learn how to make wrought wheels stronger, we test them on our unique inertia dynamometer: up to 30 million ft-lb of energy for a 40" wheel at 120 mph.

'61 stainless liner still tiptop. No corrosion loss; almost no adjacent galvanic corrosion: that's the verdict on these quick-emptying, hopper-floor sheets of USS Type 302 stainless steel.

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USS **United States Steel**

CHANGE-MAKERS are big problem; BART is looking for more reliable models.

A SEAT FOR EVERYBODY is a still-unachieved goal. Cars have no hand-straps.

use them is more difficult than actually using them. When we got the huge World Series crowds of first-time riders, the first night was rather chaotic; but on the second, third and fourth nights of the Series the problem pretty well resolved itself. We do have some marketing work to do to insure that people understand that a BART ticket is really a kind of credit card that they can buy in amounts for more than a single ride.

Are you satisfied with BART's ride quality?
STOKES: I am, of course, biased. But I've ridden a good number of transit vehicles, as well as main-line railroad vehicles, and we are already offering the best ride that I have ever experienced. There are some specific problems with individual cars at times but by and large we have succeeded in producing a smooth ride from the standpoint of up and down and swaying motion. I think we have achieved by far the smoothest acceleration and deceleration of any of the equipment I've ever ridden. From the standpoint of quietness, we are as good as or better than anything I have ever been on. One of the things that has been most noted and commented on by the public here in the Bay Area is the smoothness of the ride.

BART has not always enjoyed a good press in the Bay Area. Has it improved now that you are actually running trains?
STOKES: We have had excellent press, by and large, including a large number of favorable letters to the editor. We still have that small segment of the malevolent, weasel-type press which continues to pick and agitate and prod. They almost have to do that because they predicted we'd never run anyway.

Have you changed your mind about the desirability of having hand straps for standing riders to hold onto?
STOKES: With the inadequate equipment we have and the tremendous loads we've been carrying, there's no question that hand straps would have been advantageous and useful to us up to this point. But now that we're beginning to operate longer trains we think this problem is going to obviate itself. While we are not going to be able to achieve the objective of a seat for every passenger every time, we are certainly going to achieve it most of the time. We think that with the additional equipment arriving, the hand-holds on the seats will be sufficient.

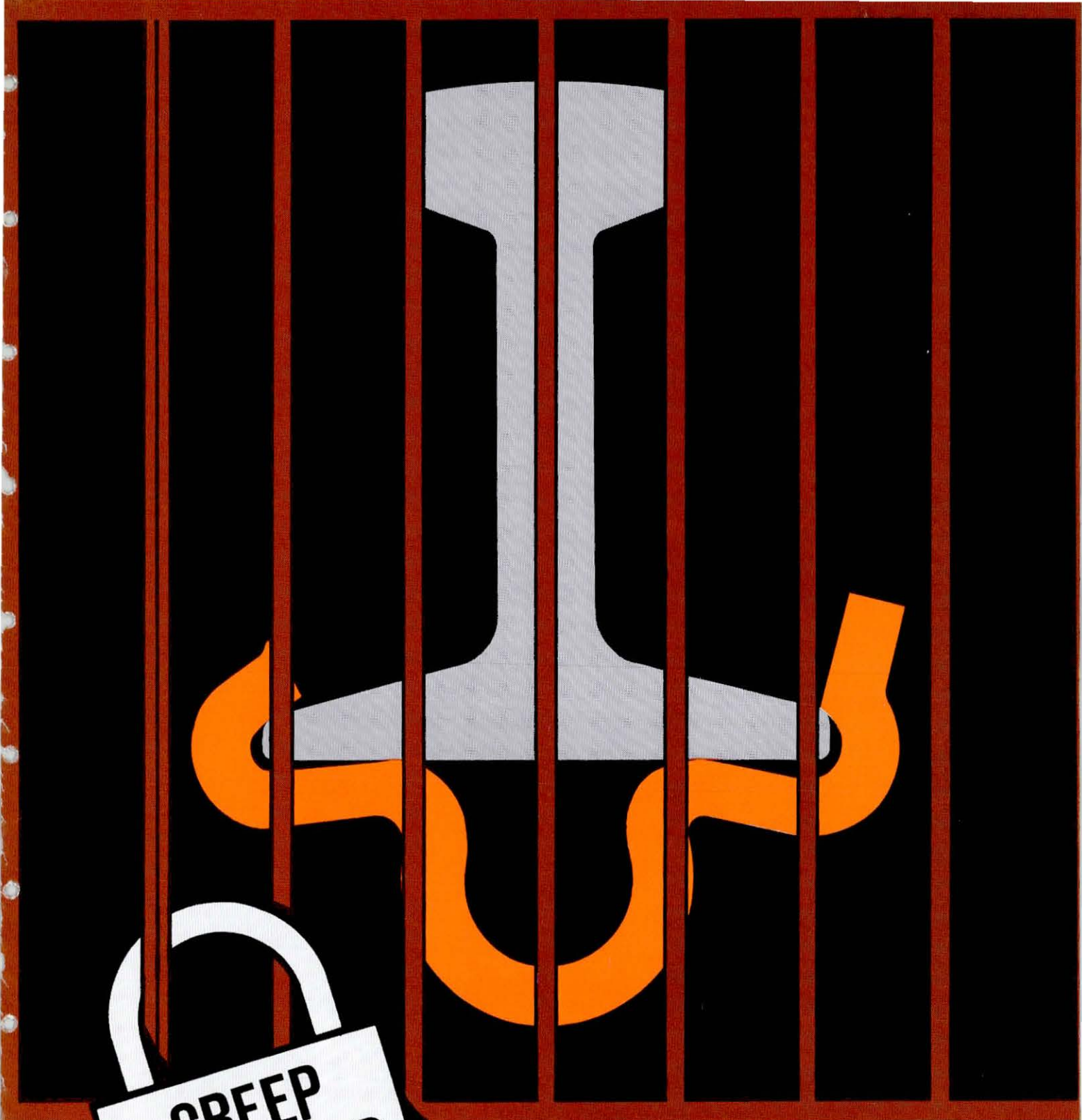
If you had it to do all over again, what would you do differently?
STOKES: We would try to get earlier some of the things we got later. We'd like to have had the cars earlier, and the train control system a lot earlier than we had it. Other than that, I think we would have done just about what we did.

Actually, we are very pleased with the way things have gone. We have been called upon to do the all-but-impossible, particularly during the World Series week, when we imposed unbelievable requirements on our equipment, and demands on our fare collection machinery which we didn't think we'd hit for years to come. Both stood up very well. I think there is general agreement that we are doing much better than we really had any reason to hope for.

Has your success brought any of those areas that are not part of the Bay Area Rapid Transit District any closer to becoming a part of it?
STOKES: Yes, without question. Right now we have several studies under way. The San Francisco airport study is complete; we are trying to figure out the financing and politicking of it. San Mateo County, with Federal money, is studying an extension from the airport down to the Santa Clara County line. Santa Clara itself has cranked up its own transit district and they're in the process of getting organized for a study from the Santa Clara County line through San Jose back up to Fremont. We have under way on our own studies to the Pittsburg-Antioch area, the Livermore-Pleasanton area, and an extension to the Oakland airport. The miles now under study are considerably greater than the miles we are going to open in the next nine or ten months.

How about the North Bay area, Marin County. Is that at all active?
STOKES: Yes, but it's a little too early to tell what's going to happen. As you know, the Golden Gate Bridge and Transportation District has in the last several months taken over the old Greyhound commuter operation and has also initiated ferry service which it intends to expand. From what we gather they are doing a very fine job. We do have an extension study under way in the Geary corridor from downtown San Francisco out toward the Golden Gate Bridge. It's too early to tell what may happen until Golden Gate has got more experience with its ferries and buses. Certainly there is never going to be another major north-south freeway built through Marin County.

Will BART ever go to Sacramento?
STOKES: As a matter of fact, there is now under way a two-year, $600,000 study, under state auspices, to figure out what should be done between the Bay Area, Stockton and Sacramento—whether there should be more freeways, or an extension of BART, or perhaps a tracked air-cushion vehicle line. ■



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ASEA

Circle 12 on coupon on page 33

New Products Report

Toilets can be actuated pneumatically or electrically

The Prime Manufacturing Corp.'s PM-592 (reinforced acrylic) and PM-918 (stainless-steel) Recirculating Toilets are designed for railroad application. The basic unit is operated pneumatically but electrically-actuated models are available. Service and maintenance are performed by removing the upper case and liner assembly which enclose the entire working mechanism.

Circle 60 on reader service card

Waste treatment system is for locomotives, cabooses, camp cars

The HEDS, Inc., waste treatment system involves electrolytic maceration which sterilizes and flushes without moving parts in the processing tank. The Model 5172 for locomotive application (and others for new or retrofit application on cabooses and camp cars) is installed under a standard flushing hopper. A logic circuit prevents dumping at service areas or in terminals while assuring total treatment of tank contents before dumping. No chemicals or supporting equipment are required. The effluent meets FDA and AAR sterilization requirements. The unit uses 15 amps and may be powered from a-c or d-c power systems varying from 12 to 115 volts. The tank is extruded polypropylene and is impervious to hydrocarbons, alkalies and acids.

Circle 61 on reader service card

Anti-graffiti coating works on a wide variety of surfaces

A new water-based polymer coating forms a clear protective film over masonry, metal, wood, painted surfaces, marble, brick or almost any other surface. Introduced by the Jersey State Chemical Division of Sybron Corp., the coating may be applied by spraying, painting or merely wiping. Pen, pencil, drymarker, lipstick and charcoal marks are easily removed by wiping with a mild detergent. Aerosol paints and paint marks can readily be removed with the appropriate cleaner. Marks of this type will not penetrate the treated surface.

The non-flammable coating, can be touched up or patched up. It is non-yellowing, does not affect the appearance of the material to which it is applied, and protects masonry and painted surfaces from sulfur dioxide in urban smog.

Circle 62 on reader service card

Big on-line information display designed for passenger terminals

A high-visibility information display compatible with over 55,000 private teletype terminals in operation today has been introduced by Trans-Lux Corp. The largest on-line display of its type, it is expected to have broad application in transportation, commerce and industry. A key market will be railroad, airline and bus terminals. Called the Trans-Lux News Jet "72," the 10-foot-wide electronic device can handle up to 72 characters per line, on six lines, at speeds up to 100 words a minute. A 48-character-per-line model is in use by a major U.S. railroad for arrival and departure posting as well as general passenger information and sales promotion. The "72" utilizes a magnetically-activated dot matrix to form its 1 3/4-in.-high characters. The dots are a translucent green and glow brightly via integrated ultraviolet light. Legibility has been tested beyond 100 feet under all lighting conditions.

Circle 63 on reader service card

New railroad-type solderless terminals come in several sizes

A variety of insulated and non-insulated railroad-type solderless terminals in several sizes has been introduced by Hollingsworth Solderless Terminal Co. The various barrel styles are: NIT—non-insulated terminals with chamfered barrel ends for easy insertion of wire; NIT brazed non-insulated terminals which can be crimped along the seam without splitting open; FIT—fixed insulated terminals which provide resistance to minor vibrations and have insulation coded to railroad specifications; FIIG—fixed insulated grip terminals which protect against high vibration and have

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insulation color coded to railroad specifications.

The various styles are available in a heavy-duty design in sizes 20-16 and 16-14 AWG, and in a regular ring design in size 12-10. Standard insulation is vinyl; nylon is available as an option on some types. Other features of the different barrel styles include serrated grooves in the barrel to grip wire firmly, heavy-gauge copper material, electro-tin plating and quick visible wire size identification.

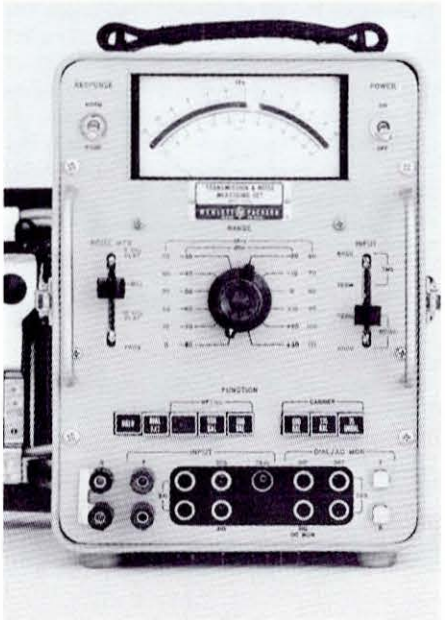
Circle 64 on reader service card

Wheel sensor detects speeds up to 125 mph

A compound wheel sensor from Abex Corp. signals the presence or passage of a wheel at any speed up to 125 mph. The wheel sensor clamps to the rail base and contains balanced bridge coils producing an ac field of high audio frequency. Any wheel flange disturbing the magnetic field set up by these coils produces a pair of output patterns, with shape and voltages being independent of wheel geometry at high speed or dead slow creep. Any stop and reversal directly over the sensor is positively recognizable as a sequence interruption.

Built to operate from +140 to -20 deg F (-65 with internal heaters), the wheel sensor will tolerate vibration, water or a direct blow from an out-of-tolerance flange. It rejects interference from fields due to electrified railways, power lines and other sources.

Circle 65 on reader service card



Test set is for phone level and noise measures

The Hewlett-Packard HP model 3555B transmission and noise measurement set is designed especially for telephone plant maintenance. It measures transmission level, noise and crosstalk coupling; determines line balance; identifies noise characteristics; and can test, trouble-shoot and align systems. The 3555B can make permanent long-term recordings with a stripchart recorder and combines to make a complete transmission measuring system with companion 236A telephone oscillator.

Features of the 3555B include C-message, program, 3kHz flat and 15kHz flat weighting networks; balanced 135, (150), 600, 900 ohm and 75 ohm unbalanced, bridging or terminated inputs; 200 volt maximum longitudinal voltage; and input jacks accept all common telephone plugs. The 3555B transmission and noise measuring set operates from internal battery, 24 volt or 48 volt office battery, or ac line; has dial and hold provisions; ac and dc monitor outputs; 3 MHz bandwidth for level measurements and also for a RMS meter response.

Circle 66 on reader service card

NEW LITERATURE

BULK WEIGHING. B&R Systems & Controls offers a four-page brochure describing its electronic net bulk weighing systems. It describes the Model SSB 9000 weighing system, engineered to measure and control receiving and shipping of bulk materials such as grain, cement, sugar, salt and oils.

Circle 70 on reader service card

LUBRICATION. Shell Oil Co. has released four publications about various aspects of lubrication: (1) a brochure describing the company's Tornus oil locomotive diesel engine lubricating oil; (2) a 24-in. by 36-in. wall chart illustrating application of Shell products to railroads; (3) a color folder on Shell's locomotive engine lubricating oil, Caprinus; (4) a catalog of petroleum products—including fuels, oils, greases, solvents and sprays—applicable to railroad industry requirements.

Circle 71 on reader service card

REGULATOR VALVE. A bulletin from Northeast Welding & Machine Co. describes the company's NE200-8 precision regulator valve, designed for applications where precise pressure control is required over long time periods under varying-temperature and supply-pressure conditions.

Circle 72 on reader service card

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"Most modern class yard" begins to take shape in California

By R.E. DOVE, Associate Editor

At West Colton, Calif., the Southern Pacific is building what it believes to be "the most modern hump-retarder classification yard in the world." This belief stems from the fact that, when completed, it will be the most advanced yard in terms of automation, hands-off operation and just sheer quantity of signal and control equipment that is involved.

This electronically controlled yard is being constructed at a cost of $39 million at the south end of the Palmdale-Colton cut-off line, which was built about five years ago. This site places it at a strategic location, offering easy access westward to the entire Los Angeles Basin, eastward to Arizona, Texas and the Mississippi River gateways of St. Louis, Memphis and New Orleans, and northward to northern California and the Pacific Northwest.

The new yard is being constructed in an east-west direction and will be 6.5 miles long and have 96 miles of track. An 8-track receiving yard, with a capacity of 1,800 cars and with each track holding a minimum of 170 cars, will be located at the west end of the project. Trains will enter from three directions (north, east and west) and, after inspection in the receiving yard, will be humped directly into the classification yard. Track centers of 20 feet have been set for the receiving yard to allow enough room between tracks for automotive and mechanical equipment to move freely.

● **Combination class/departure tracks.** The 48-track classification yard, having a capacity of 2,800 cars, will be served by a single-track hump. The bowl tracks will be arranged in six track groups at the hump end of eight tracks each. South of the classification yard there will be an additional group of eight tracks, including four service class tracks, two upgrading tracks and two caboose servicing tracks. Immediately south of these tracks is a "one-spot" car-repair facility with three completely mechanized tracks under the shop building and an adjacent Speed Repair & Load Shifter track. At the east or leaving end of the bowl, the tracks will be in two 24-track groupings, with the four center tracks of each group extending directly in line with four tracks in the departure yard, making them combination classification/departure tracks. The latter tracks will have 17-foot centers with roadways constructed between tracks to facilitate train inspection and air testing by motorized vehicles of the mechanical forces.

IN CONSTRUCTION of $39-million facility at West Colton, Calif., SP is employing a number of cost-cutting techniques. To save work-train and unloading expense, rails are pushed one mile from the welding plant directly to the site at which they are to be laid. After full length is reached, string is lined over to the adjacent track.

West of the hump crest will be a coupled-in-motion electronic scale, a turnout to two "no-hump" set-out tracks and, on the hump lead, a device for checking dragging equipment.

● **Retarders on hump lead.** An unusual feature of the classification yard will be the number and position of the retarders. Thus system will include 18 approach retarders ahead of the hump crest, one master retarder, 7 group retarders, 2 intermediate retarders and 56 tangent-point retarders. At the east end, the bowl tracks and the utility and car-servicing tracks will be served by 56 skate retarders, each having controls allowing them to be opened when cars are to be pulled through them.

The departure yard, with a capacity of 2,000 cars, will have 14 tracks. Eight of these, holding an average of 100 cars each, will be in line with the two groups of combination classification/departure tracks, and two holding 80 cars each will be for local departures. Set-out tracks will be provided at both ends of the classification yard for engines and cabooses.

The locomotive servicing facilities, south of and between the classification and departure yards, will include three inbound storage tracks with a total capacity of 70 SD 45's, a 190-foot long diesel-washing slab and a 500-foot cleaning and drip slab on three tracks, a diesel-servicing facility 435 feet long and 112 feet wide, with three pits served by sand, fuel and lubricating oil, and 10 engine-ready tracks in herringbone pattern. A wyetrack will be provided for turning the units.

● **Minimum interference to car flow.** The layout of the yard was formulated to provide an organized and rapid movement of cars with a minimum of conflicting or restriction points. Cars and motive power will flow through the yard in a west to east direction. All basic functions of receiving, cresting, train make-up, and departure, as well as mechanical functions for cars and motive power, can be carried on with minimum interference. The combining of classification and departure tracks into a "key" unit, running tracks on each side of the yard, strategic location of crossovers and leads in receiving, classification and departure areas and location of locomotive facilities all help to provide this ability.

Innovative uses of technology include electric blue flags, power switches, electric movement indicators and arrival and departure sensors. These devices are all operated from two control points, the top floor of the administration building and from the trim tower. Electric blue flags and the sensors for arrival/departure create data records when activated.

● **To get higher humping rates.** The main use of technology in an innovative way is the change of basic automatic hump retardation philosophy. In a traditional yard, intermediate and group retarders perform both functions of spacing and coupling speed control. At West Colton, the master, intermediate and group retarders perform a spacing function only. Tangent-point retarders at the west end of each classification track are provided to control coupling speed. This separation of retarder functions makes possible higher humping rates of six cars per minute or more.

● **Data-control system.** The data system is comprised of two main sections—the CCC, or crest control computer, and the TCC, or terminal control computer.

The CCC is strictly a process control system whose function is the switching and retardation of cars. It performs no management function and does not even

Special construction equipment devised by Southern Pacific helps keep costs under control at West Colton

keep inventory of the class bowl. The hardware configuration consists of two Xerox Sigma-3, 32K computers, four CRTs, two Teletypes and one card read/punch. One computer will always be in hot standby should the on-line unit fail. The standby unit will not be used for off-line processing.

The four CRTs are for displaying hump-list information only. The Teletypes are for logging of alarm and maintenance messages to the signal department. Data flow between the CCC and TCC is via a high-speed communication link. Back-up for this communication link is provided by the card read/punch. The only data record input devices to the CCC are the TCC and the back-up card read/punch.

Digital information from the field (electric blue flags, sensors, radar, etc., and the engine foreman's control panels) come in via the CCC *but no* data record inquiry or changes can be made via the CRT's or Teletypes connected to the CCC.

Train lists are input to the TCC and are passed to the CCC when needed for cresting. Data on these lists may be changed at any time before the list is called up on the engine foreman's CRT. Once this is done, no change may be made to a car record on the list. With the high humping rates involved, it is undesirable to establish a practice of changing records during cresting.

● **Controlled from San Francisco.** The Terminal Control Computer will be located in San Francisco. This TCC system is for management functions only. Its main systems will be:

(1) Inventory
(2) Car movement instruction generator
(3) Planning system
(4) TOPS interface
(5) Crew dispatching
(6) Operating displays

As cars move from track to track, movement of inventory will be accomplished through this system, commonly referred to as "CMIG." The only exception to this is the cars tracked by the CCC into the classification tracks.

The basic idea is simple. Once a car is originally established in inventory, its movement from track to track is inferred by the computer from written instructions issued by the yardmaster to the yard crew using the computer as the message-issuing medium.

To do this, the yardmaster calls up a format on his CRT screen. The format contains information fields which, when filled out, reference a message dictionary to create an instruction message which is issued to the engine foreman via Teletype and which is held in suspense by the computer. When the engine foreman reports the task completed, the yardmaster recalls the instruction to his CRT and okays it. At this time, the computer moves inventory as directed by the original instruction and issues the next instruction, if any, to the engine foreman. If there is an exception (a car not placed where instructed), this is handled by a clerk using a format on his CRT for adjusting inventory.

● **Permits advance planning.** Because of the availability of real-time inventory and the information contained in a trains-due file, the opportunity exists to do advance planning on a detailed basis. The two basic elements of planning are inventory and decision rules in the form of blocking and train make-up instructions.

These instructions reside in what is called the "Outbound schedule and make-up file." This file contains all schedule and make-up data for each train, local and industrial yard cut departing from the yard.

From the inventory, trains-due file and outbound schedule and make-up file, the planning system will put out reports of predicted traffic available for schedules.

When the planner wishes to use the planning system, he selects the schedules to be run. After he has selected the schedules, the system will search inventory and trains-due and list those tracks and trains having cars for the schedules selected.

Using car schedules criteria, it will identify blocks to be made and cresting sequence of cuts to be switched. It will assign cars to blocks and blocks to trains, call the trains and issue cresting and trim instructions. Included as part of this system will be computer-assisted assignment of resources, classification and departure tracks.

Cost-saving ideas

In addition to the innovations employed in the design of West Colton yard, the SP devised equipment for saving money on the yard construction.

● **Distributes ties by machine.** One of the cost-saving methods is a tie-placer machine for distributing crossties. This machine deposits crossties at regular intervals on the roadbed as it moves along the staked center line of the track. It has its own crane for lifting bundles of ties from a flatbed truck without having to stop for reloading. The truck is driven alongside at the same pace as the tie-placer. When unloaded, the truck returns to the point where cars of ties are set out and it is reloaded. This enables the tie-distribution operation to proceed continuously.

The tie-placer is towed by a truck tractor. In addition to the driver and crane operator, the machine is manned by eight other men. Four, standing on side platforms, cut the steel banding of the bundles and arrange the ties on an endless-chain mechanism that carries them to the rear of the machine. Two men operate the ejecting mechanism and two other men position the ties on the roadbed at the exact tie centers. The latter two men use special tie hooks. Each of these hooks has a bar which is butted against the previously placed tie to produce the right crib width.

● **Prefabricated turnouts.** More than 312 turnouts are involved in the yard construction, so the SP set up a template for mass producing them. The template is long enough to allow the production of two No. 9 turnouts simultaneously, one right hand and the other left hand, and there is enough track at each end to accommodate a complete turnout when it is pulled lengthwise to permit the immediate start of a new turnout. The work force is comprised of a foreman, an assistant foreman, 2 machine operators and 12 laborers.

The template is designed for producing either No. 7 or No. 9 turnouts, which comprise the bulk of the turnouts to be used in the yard. The locations of the points of switch, points of frog and the centers of each switch tie are painted on the template. Sawed, treated switch ties are stock-piled by various lengths on one side and the piles are replenished as necessary. Another track is constructed between the template track and the tie stock piles on which a Tie Handler works in placing ties on the template. The Tie Handler operator has a list tacked on the door of his cab showing the number of switch ties of each length required for the two different turnouts. The template has a stop board on the line side against which the ties are butted.

On the other side of the template are piles of standard tie plates, switch points, self-guarded frogs, spikes and track bolts. The switch plates, clips, bolts and rods are shipped in a package so that all material is available without the need to gather up and count the various components for a complete switch. Another bundle contains all frog plates.

As the Tie Handler places the switch ties, two laborers accurately space and align them and other men place the plates. A Speed Swing crane is used to

(Continued on page 40)

Circle 13 on coupon page 33 ▶

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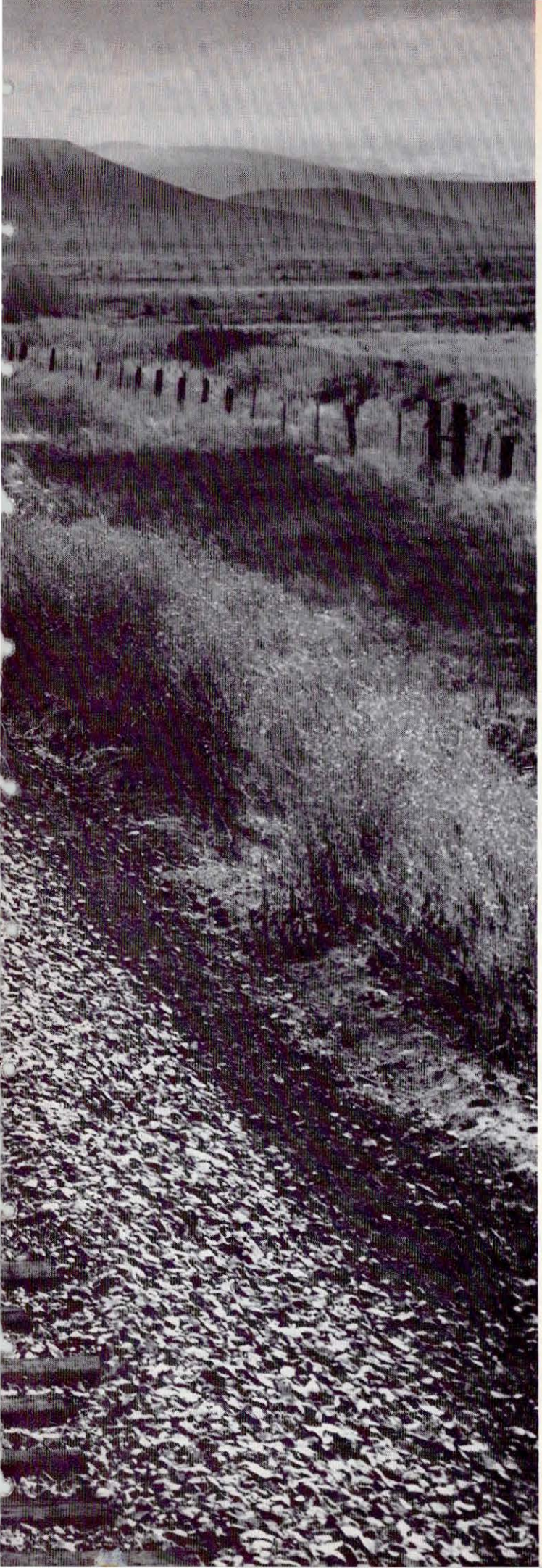
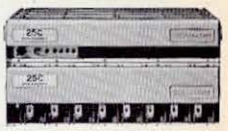
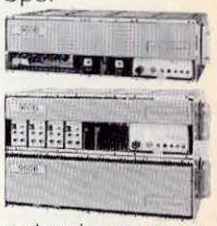


Whatever data CTC needs, we supply the transmission equipment to get it there. From anywhere.

After more than 25 years of working on data transmission systems for railroads, we've got a pretty good idea of your needs. And a pretty impressive line of products that fit your requirements.

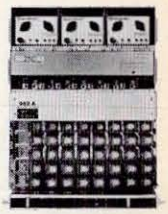


We can provide equipment to update existing systems, giving you more flexible performance. Our 25C, 25D, 26C, and 26D Telegraph and Data Transmission Systems transmit such things as waybill and car-routing information. Single and multi-channel capabilities are available, at speeds from 75 to 4800 bps.



Next, the GTE Lenkurt 960B Journal Data Transmission System (made specifically for railroads) transmits hot-box, dragging equipment, broken flange, and loose wheel information. And all of this data is recorded on the same chart in your CTC office.

Finally, the 962A Protection System backs up your entire primary communications system. It provides automatic circuit transfer protection for individual CTC tone/channels and four-wire VF lines between main and alternate transmission facilities. It's adaptable to cable, open wire, code lines, microwave and DDD telephone circuits.



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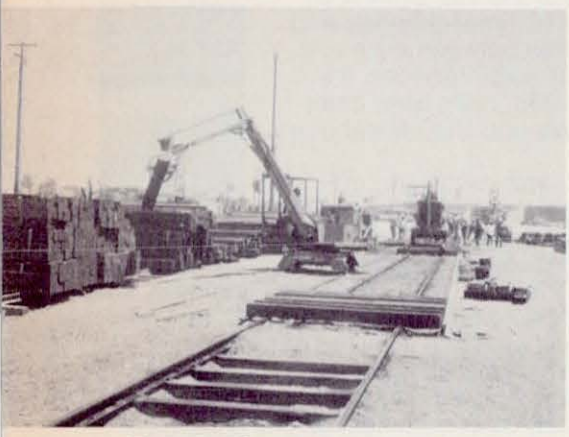
GTE LENKURT

Circle 14 on coupon page 33

TIE-PLACER MACHINE receives ties from a flatbed truck and deposits them on the roadbed at regular intervals as it moves along the staked center line of the track.

Construction cost-cutters



TURNOUTS are mass produced on a template that permits the simultaneous fabrication of two complete turnouts.

COMPLETED TURNOUTS are lifted intact from the template and are hauled by a special carrier to the location site.

(Continued from page 36)

place the points, frogs and rails. A rail saw and a multiple rail drill are used to cut and prepare the dimension rails. The spikes are started by hand and a rail-mounted air compressor furnishes the power for two spike hammers and a pneumatic impact wrench. From 3½ to 4 turnouts are completed each 8-hour working day.

● **Special carrier for turnouts.** When completed, a turnout is slid off the work site to the end of the template track, after which it is picked up intact by a carrier and placed in a storage pile until needed. The carrier also is used for hauling a complete turnout to its assigned location and laying it.

The carrier, known as "the monster," is rented from the EJ&E which invented and built it for the rearrangement of leads at its freight terminal at East Joliet, Ill., in 1958. Essentially, it consists of a 21-inch wide-flange center beam and five transverse beams, two of which serve as axle beams. Wheels on the front axle are of the caster type to enable the carrier to be steered and turned in tight places. The wheels, widely spaced, are of the pneumatic type used on heavy earthmoving equipment; they can be easily rolled over track rails. The carrier frame has five upright pairs of double-acting hydraulic rams, which are located at the ends of the transverse beams and fitted with chains at their lower ends for encircling the rails of the turnouts. The rams are powered through a hydraulic pump by a gasoline engine.

● **Novel way of laying rail.** All of the rails being used in the construction of the yard tracks will be welded, the only exception being the overhead craneway rails in the diesel servicing shop. A Chemetron Railway Products Co., Schlatter System, welding machine was set up at the site for the purpose of welding the long strings. Thermex field welds are being used to connect the strings in the yard. It was decided to save a great deal of work-train and unloading expense in the construction of the 48-track classification yard by having the strings pushed out of the welding plant directly to the track on which they were to be laid.

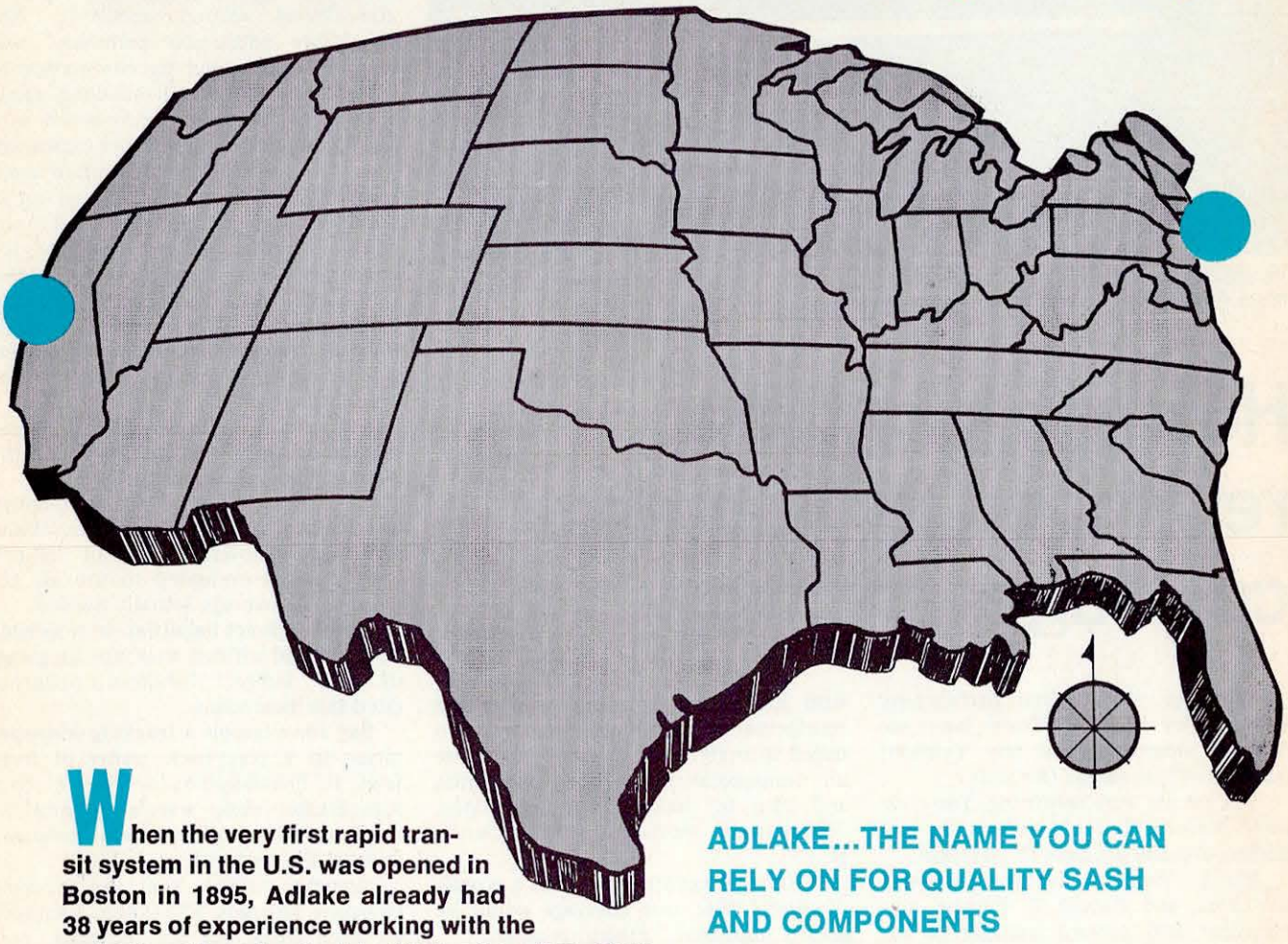
The welding plant was located at the east end of the classification yard between the two 24-track groupings. From this location half of the strings could be directed to the right for building 24 tracks and half to the left for the other 24 tracks. Adjustable threader-type rollers were constructed and set at various heights to carry the strings from the car-floor height of the last roller in the welding plant's production line to small rollers placed on the tops of ties. The adjustable rollers were built on a frame that can be shifted at will and locked in the frame for guiding the strings around the curves necessary to reach the tracks being built. Six of the adjustable rollers were built, five being placed on the curved track portion and the sixth on tangent track. From there on the rail string is guided and supported on small rollers having side flanges.

The first string for a particular track, with a guide shoe attached to its end, is pushed out of the welding plant as it grows in length. A point man, equipped with a lining bar, follows the end to properly seat it on the rollers. When the string reaches the far end of the tangent track, it is cut and lined over onto the tie plates and spiked. The shoe is transferred to the cut end of the string emerging from the welding production line, and the procedure is repeated.

With one track laid, another device was brought into play. This is a buggy with flanged wheels set at track gauge and having a socket for holding the leading end of a string along the center of the track. Again the welded string is pushed out of the plant. When it reaches its full length, it is lined over onto the ties for an adjacent track. This procedure was continued track by track.

These strings, although pushed about a mile from the welding plant, used only about 60% of the tractive pushing power of the rail pusher in the welding production line. This procedure went on night and day with only the point man being required away from the welding crew. He brought his lunch, water jug, a light and a radio for keeping in touch with the operator of the welding machine. The railroad believes this to be the most economical method for laying rail in a yard that could be devised. The construction is under the direct supervision of H.M. Williamson, chief engineer system. His representative on the ground is G.J. Lyon, assistant to chief engineer. ■

from Boston (1895) to San Francisco (1972)



When the very first rapid transit system in the U.S. was opened in Boston in 1895, Adlake already had 38 years of experience working with the nation's railroads. And in 1972 when San Francisco opens its modernized rapid transit system... Adlake is there, too.

In fact, Adlake's quality components are used by every major railroad and transit system in the United States...plus many more in Canada and other parts of the world.

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THE ADAMS & WESTLAKE COMPANY

Circle 15 on coupon page 33

VERMONT RAILWAY reviewed its program at the suggestion of Hudson General Corp., which leases 4,000 trailers and 385 freight cars to the carrier.

How one short line revamped its insurance coverage–and why

Insurance, often given perfunctory attention by railroad officers, went under the microscope at the Vermont Railway offices earlier this year.

The results were surprising. The company learned it could reduce its premium costs and broaden its coverage.

Jay L. Wulfson, Vermont Railway president, and Harold T. Filskov, vice president and general manager of the 122-mile freight-only line, realized that an insurance review "was long overdue".

● **Duplication, overlapping.** "We found a hodgepodge of policies taken out at different times and we suspected—rightly it turned out—that we had duplications and overlapping of coverage," explained Filskov. With annual revenues of more than $1 million and some 80 employees, the Vermont Railway Line extends from White Creek, N.Y., to Burlington, Vt.

"It seemed to us that 10 policies to cover buildings and contents other than rolling stock probably were too many," Filskov said.

Acting on recommendation of officers of the Hudson General Corp., a transportation service company listed on the American Stock Exchange which leases piggyback trailers and freight cars to Vermont Railway, the railroad called in M. Schacher, Ltd., an insurance brokerage firm based at Kennedy International Airport in New York. The firm has extensive experience writing transportation insurance and is often called to analyze the insurance structure of transportation-oriented companies and also to make recommendations. Schacher also represents Hudson General.

"We were convinced within a couple of weeks that our coverage could be greatly improved," Filskov recalled.

What specifically did the Schacher firm do?

After analysis by Morton Schacher, president, and his staff, six steps were taken to consolidate and strengthen the railroad's coverage:

1. Railroad liability coverage was placed with a company licensed to do business as a primary insurer in Vermont replacing an insurer not licensed to do primary business in that state, resulting in immediate savings between 10% and 15% in annual cost.

The new policy does not contain a minimum annual premium (as the old policy did) which would benefit the company if its revenues were held down for the year because of a flood or strike.

2. An all-risk package was placed for the railroad for physical damage to buildings and non-owned equipment. Also, all coverages were consolidated under one stock insurer so that it will not be necessary to deal with more than one insurer in the event of a loss.

3. Changed liability insurance so that the $10,000 deductible would be applicable to railroad-related accidents. Formerly, the $10,000 deductible applied to all accidents, including, for example, that of a pedestrian injuring himself in a sidewalk fall outside the company's offices. To simplify the mechanics of handling such non-railroad connected claims, a separate policy was issued to cover suits up to $10,000 for non-railroad related accidents. The "negligible additional premium" was more than balanced by elimination of company staff time in handling small, bothersome claims not connected with railroad operations, Schacher explained.

4. A premium savings resulted when leased rolling stock was insured up to the $10,000 deductible contained in the railroad liability policy. Formerly, the equipment was insured to its actual value but this was a duplication of coverage under other policies. Vermont Railway leases 4,000 piggyback trailers and 385 freight cars from Hudson General Corp.

5. Certain limits in the employee benefit program were increased and the over-all cost was reduced.

6. Additional travel accident coverage was instituted for executives. "Valuable papers coverage" on an "all-risk basis" was re-evaluated to provide the amount of coverage actually needed.

● **Those indirect liabilities.** In reviewing how railroad officers may not be aware of their indirect liabilities, Schacher cited this illustration:

Say for example a trucking company picks up a piggyback trailer of fresh fruit, in Philadelphia, for delivery to a supermarket chain warehouse, and the truck collides with an auto, seriously injuring the motorist.

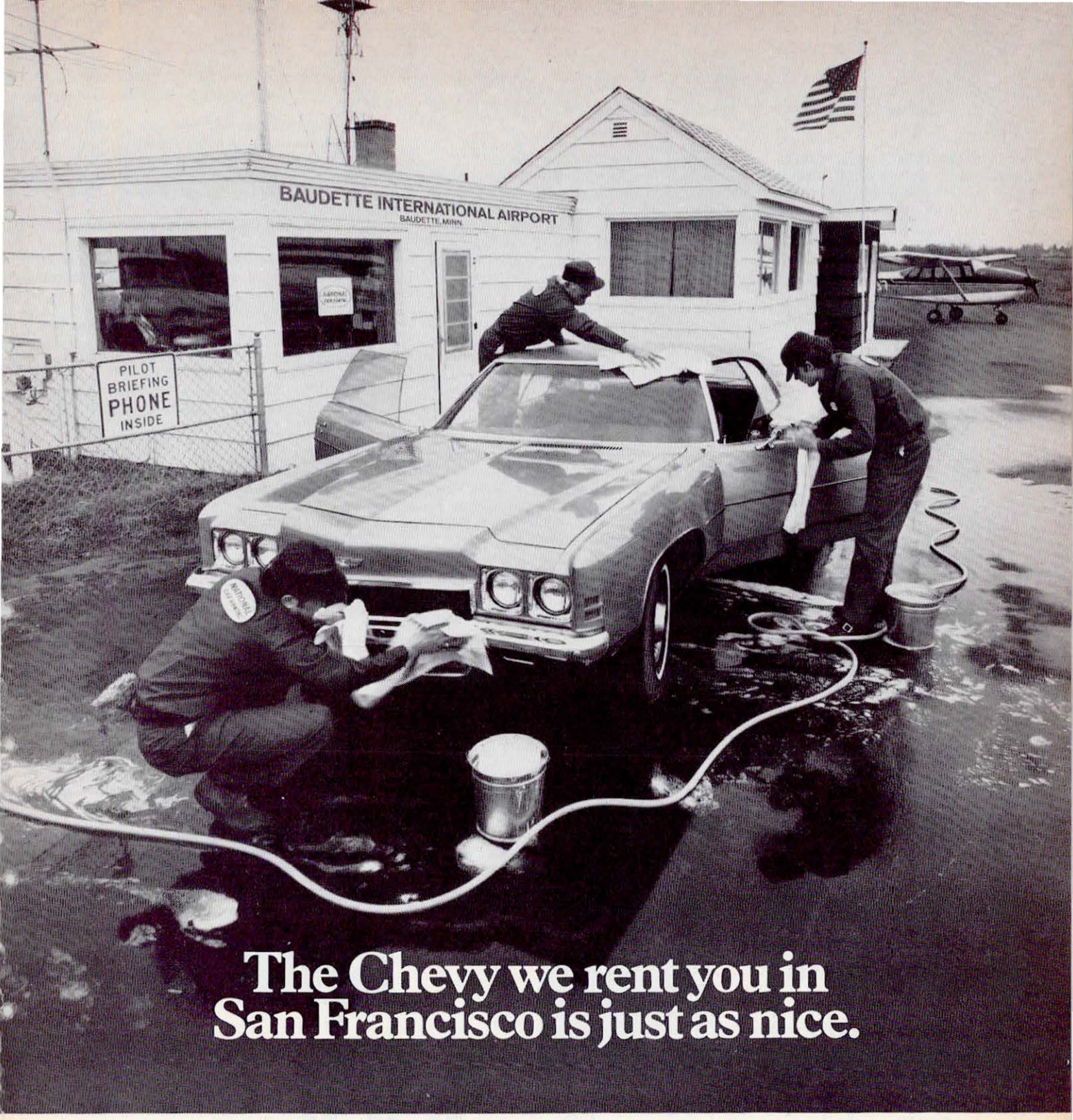
Assume further, that the trucking company has only $25,000 in insurance on each truck but the motorist, now paralyzed, sues for $200,000 to cover loss of future earnings. In that case, the motorist could also sue both the railroad that delivered the piggyback to Philadelphia, and the company that leased the trailer to the railroad.

"Therefore, extra liability protection for both the railroad and owner of the trailer could be vital."

Another hypothetical illustration indicates how a railroad can avoid serious damage as a result of flood.

Assume a strike has tied up 1,000 piggyback trailers belonging to one railroad in a freight yard. Assume further that a hurricane, smashing into that region, sweeps away 100 of those trailers. The loss could be staggering. But a floater policy if properly written would have resulted in reimbursement.

"Thus, there is a critical need for every railroad to constantly review and reassess the completeness of its coverage," stresses Schacher, who has been an insurance broker since 1946. ■



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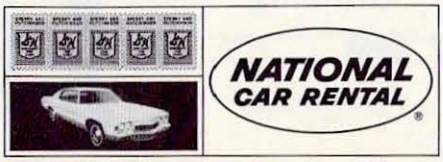

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People in the News

ILLINOIS CENTRAL GULF.—In the traffic department, **Gerald C. Stuckey** named senior assistant vice president; **Jack H. Butridge**, assistant vice president-traffic; **Tim Lyman**, assistant vice president-marketing; **Robal A. Johnson**, assistant vice president-sales; **G. Frank Blankinship, Jr.**, general manager-intermodal services; **Jack E. Andrews**, general manager-coal; **Larry S. Hickman, Jr.**, assistant vice president-industrial development; **William H. Jewett**, director of commercial planning; **Tom T. Martin**, industrial development consultant. All will have headquarters at Chicago, except Messrs. Butridge and Martin, who will be in Mobile.

MAINE CENTRAL.—**William J. Berry**, sales manager-industrial markets, promoted to assistant vice president-sales and service, Portland, Me., replacing the late **Herman E. Buchheim.**

Ralph W. Libby, assistant director car utilization, promoted to director car utilization, succeeding **Samuel P. Ruth**, who retired Oct. 20. **Robert P. Nurse**, car service agent, appointed assistant director car utilization.

MISSOURI PACIFIC.—**William J. Farrell**, general manager, Chicago, transferred to the new Eastern District, which has been formed through reorganization and consolidation of the Eastern and Southern operating territories to encompass operations from Chicago and St. Louis to Texarkana and Alexandria, La. Mr. Farrell, who will have headquarters in Little Rock, Ark., succeeds **James W. Gessner**, promoted to general manager-transportation, St. Louis. **J.B. McCormick**, superintendent, Little Rock Terminal division, advanced to the newly created position of general superintendent, Eastern District, Little Rock. **R. Gerald Lang**, trainmaster, Longview, Tex., replaces Mr. McCormack. **Lee V. Hobbs**, assistant general manager, Western District, Kansas City, transferred to Little Rock, to succeed **David T. Barksdale**, retired. Mr. Hobbs' successor is **Richard K. Davidson**, superintendent, Arkansas division, Little Rock, who in turn is succeeded by **Billy E. Kerlee**, superintendent, Palestine division, Palestine, Tex. **John W. Brugioni, Jr.**, superintendent, Northern division, Kansas City, succeeds Mr. Kerlee. Mr. Brugioni's successor is **Ronald McCoy**, assistant superintendent, Kansas City Terminal division, Kansas City, who in turn is succeeded by **Cole Oehler, Jr.**, trainmaster, Shreveport, La.

NORFOLK & WESTERN.—**Donald E. Middleton**, assistant secretary, named corporate secretary, succeeding **William H. Ogden**, retired.

PACIFIC FRUIT EXPRESS.—**Joseph W. Zimmerman**, assistant to the assistant general manager, San Francisco, named superintendent, Western District, Salinas, Calif., to succeed **Stephen Schaffer**, retired.

PACIFIC SOUTHCOAST FREIGHT BUREAU.—**Cyril A. Sprengelmeyer** named to the newly created position of assistant chairman, San Francisco. He was formerly assistant to manager-traffic, **Santa Fe** there.

PENN CENTRAL.—Effective Nov. 1, **Robert K. Pattison**, general manager, Metropolitan Region, New York, will report directly to **J. Bruce Addington**, vice president-operation, Philadelphia.

William M. Worthington, assistant division engineer, Harrisburg Division, Harrisburg, Pa., named division engineer, Chesapeake Division, Baltimore.

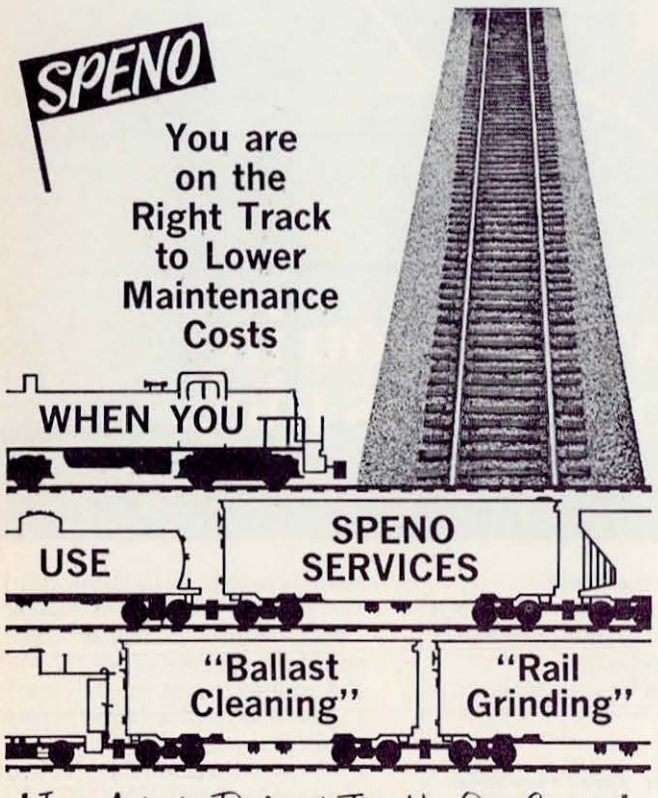
ROCK ISLAND.—**John E. Davis**, assistant general attorney, appointed general attorney, Chicago.

ROCK ISLAND MOTOR TRANSIT.—**Michael P. Thomas** named vice president and general manager, Des Moines, Iowa.

SANTA FE.—**Frank N. Grossman**, assistant manager of public relations, Chicago, appointed assistant to the president. Mr. Grossman's successor is **Robert E. Gehrt**, formerly special representative of public relations (RA, Sept. 11, p. 45).

Stephen F. Baca, assistant manager, market research, named assistant manager-pricing, freight traffic department, Chicago, to succeed **Arthur R. Kilian**, retired.

(Continued on page 48)



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Circle 16 on coupon page 33

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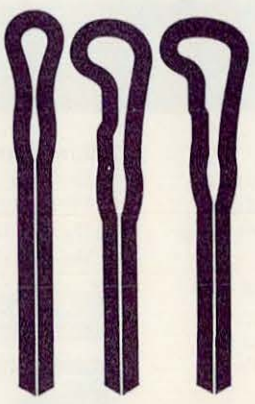

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Market Outlook

CARLOADINGS

Loadings of revenue freight in the week ended Oct. 28 totaled 548,216 cars, according to the Association of American Railroads. This was a decrease of 4,915 cars, or 0.9%, compared with the previous week, and an increase of 109,736 cars, or 25%, compared with the corresponding week last year. Ton-miles generated by carloadings in the week ended Oct. 28 are estimated at 16.7 billion, an increase of 23.2% above the corresponding week of 1971.

REVENUE FREIGHT CARLOADINGS

Commodity	Oct. 28 week	Oct. 21 week
Grain	31,157	32,790
Farm products	19,098	19,476
Metallic ores	41,419	39,943
Coal	88,355	90,997
Crushed stone, gravel & sand	29,789	29,935
Nonmetallic minerals	10,427	11,043
Grain mill products	20,164	20,749
Food and kindred products	25,624	26,032
Primary forest products	25,195	24,994
Lumber & wood products (except furniture)	18,210	18,271
Pulp, paper & allied products	23,725	23,334
Chemicals & allied products	27,229	27,089
Petroleum products	8,977	9,255
Stone, clay & glass products	21,537	21,950
Coke	7,429	8,116
Metals & products	25,197	24,813
Motor vehicles & equipment	28,184	27,405
Waste & scrap materials	16,232	15,717
Forwarder & shipper assn. traffic	8,113	7,571
All other carloads	71,653	72,618
LCL traffic	502	555
Total cars loaded	**548,216**	**552,653**
Cumulative total, 43 weeks	1972	1971
	21,563,875	**21,257,564**
Estimated revenue ton-miles (billions) 43 weeks	648.6	617.2

PIGGYBACK LOADINGS

U.S. piggyback loadings for the week ended Oct. 21 totaled 29,411 cars (16.8% above the corresponding week last year) and 50,336 trailers or containers (up 19.9% from 1971). Cumulative volume for the first 42 weeks of 1972 is 1,061,247 cars (up 9.8% from last year) and 1,787,562 trailers or containers (up 12.9% from 1971).

IN CANADA

7 days ending	Tons of Revenue Freight	Cumulative Totals
Oct. 14, 1972	4,451,656	162,464,492
Oct. 14, 1971	4,172,773	166,051,961

● *Amtrak.*—Ordered 40 3,000-hp locomotives from Electro-Motive at a cost of $18 million. The units are expected to be in service before next summer's travel season.

● *Chicago & North Western.*—Ordered 500 100-ton, 4,600-cu-ft-capacity covered hopper cars from ACF at a cost of $8.5 million.

● *Cook Industries.*—Will lease 320 covered hopper cars from North American Car. North American will build 120 4,427-cu-ft-capacity cars at its Chicago Ridge, Ill., plant; Pullman-Standard will build 200 4,740-cu-ft-capacity cars at Butler, Pa. The lease contract is valued at about $5 million.

● *Reading.*—Ordered 200 50-ft, 9-in. box cars from Pullman-Standard at an approximate cost of $3.9 million, and 50 60-ft, 9-in. box cars from Berwick Forge & Fabricating at an estimated cost of $1.6 million. All cars will be of 70-ton capacity.

● *Freight-car orders and deliveries.*—The following report has been received from the ARCI and the AAR:

DELIVERED

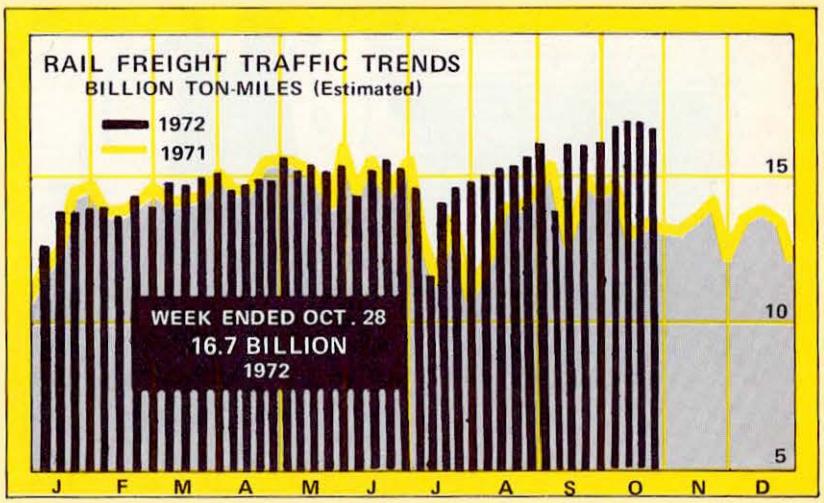
	Sept. 1972	Aug. 1972	Sept. 1971
Built new by carbuilders	2,619	2,822	4,142
Built new in R.R. shops	580	567	557
Built new—total	3,119	3,389	4,699
Rebuilt	186	312	710
TOTAL DELIVERED	**3,385**	**3,701**	**5,409**

ORDERED

To be built new by carbuilders	4,516	4,975	1,534
To be built new in R.R. shops	579	137	0
To be built new—total	5,095	5,112	1,534
To be rebuilt	0	367	380
TOTAL ORDERED	**5,095**	**5,479**	**1,914**

ON ORDER AND UNDELIVERED

	Oct. 1, '72	Sept. 1, '72	Oct. 1, '71
To be built new by carbuilders	16,386	14,493	19,880
To be built new in R.R. shops	4,256	4,257	3,233
To be built new—total	20,642	18,750	23,113
To be rebuilt	1,775	1,961	2,001
TOTAL ON ORDER	**22,417**	**20,711**	**25,114**



Source: Association of American Railroads

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Circle 21 on coupon page 33

LETTERS

Single-railroad proposal

Berkeley, Calif.

To the Editor:

I have no objections to national rail companies. Nationalization is often the only way out of financial difficulties. But there is no need for a single national system, which might only drag down the successful carriers in other parts of the country by trying to carry the bankrupt lines of the northeast. It would be quite possible to nationalize the northeastern railroads, while leaving the profitable southern and western lines in the hands of their owners and managers.

But rather than to nationalize the northeastern lines, it would be more appropriate to develop a regional system by means of interstate treaty, as was done with the Port of New York Authority. A nationalized system passes the northeastern regional losses to the whole country. Amtrak is an example of how those regional losses are shifted to the whole country: while Amtrak's losses are funded nationally, I am told that 70% of the payments go to the Penn Central. An interstate compact would leave the financial responsibility for the problems of eastern railroads on the backs of those who utilize them. Federal grants or guarantees would still be possible to meet critical needs or to fund experimental activities. . .

There is another theme which recurs in the thinking of Maine Central President E. Spencer Miller [RA, Sept. 25, p. 10] which disturbs me, and that is his emphasis on railroads rather than on transportation. Railroad managements should quit thinking of themselves as railroad men, and start thinking of themselves as transportation men. It is the service of moving people and things from here to there, and not the technology of the movement, which should be dominant in their thoughts. The Southern Pacific is an example of a successful company that for generations has accepted transportation, and not just railroading, as its function. Back in the 20's, remember the old Morgan Line to New York? And SP's minority interest in Pacific Greyhound in the 30's? And now there is Pacific Motor Trucking, and pipe line operations, and a common carrier communications system just begun. . .

John P. Carter, Professor
School of Business Administration
University of California, Berkeley

Toronto transit

Winnipeg, Canada

To the Editor:

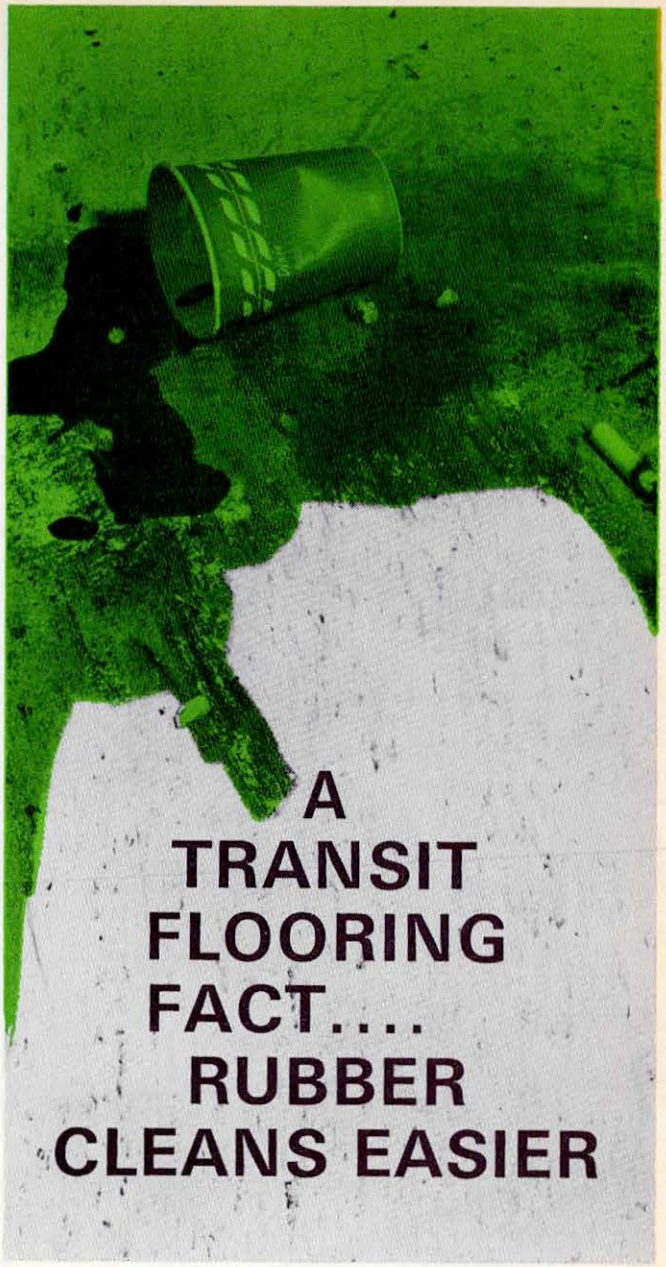
Congratulations on the article "Toronto digs, rides and digs again," which appeared in the Sept. 11 issue of Railway Age.

The approach is direct and methodical—and the results are dazzling.

Toronto is considered to be one of the leading transit authorities on the North American continent. Their concept of close integration of surface and sub-surface line works, and especially T.T.C. elected to keep PPC cars and trolley buses when other cities were scrapping them wholesale. If this type of vehicle works—why get rid of them?

It is quite possible that articles such as yours may make other transit authorities think twice when ordering new vehicles for their fleets. We here at Flyer fully believe there is a great future for the electric trolley.

T.J. Ault
Chairman of the Board
Chief Executive Officer
Flyer Industries Limited



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Circle 17 on coupon page 33

(Continued from page 44)

D.S. Hyder appointed terminal manager-TOFC, Los Angeles Terminal division, Los Angeles.

SEABOARD COAST LINE.—Elbert Jackson, Jr., general freight agent, Jacksonville, appointed manager-pricing there. **B.Y. Carver, Jr.,** assistant manager pricing, succeeds Mr. Jackson. **H.H. Smith** named assistant general freight agent, succeeding **J.N. Spencer,** who replaces Mr. Carver.

O.C. Rose, manager pulp and paper sales, SCL, named assistant vice president in charge of pulp and paper sales for the SCL and **Louisville & Nashville,** at Jacksonville, Fla. **M.O. Bishop** appointed general agent, SCL, Cleveland, Ohio.

SOUTHERN PACIFIC.—Alvin J. Reagan named assistant signal engineer, San Francisco.

C.W. Champlin, assistant chief special agent, appointed chief special agent, to succeed **William H. Stone,** who retired July 31.

SOUTHERN PACIFIC TRANSPORT CO. & SOUTHWESTERN TRANSPORTATION CO.—D. Humphrey named vice president. He was formerly assistant general manager, **Pacific Motor Trucking Co.**

TRAFFIC EXECUTIVE ASSOCIATION-EASTERN RAILROADS.—William J. Bolch appointed chairman, General Freight Traffic Committee, New York, succeeding **Aaron Cohen,** retiring after more than 50 years of service. **Edward C. Bock** appointed assistant chairman, General Freight Traffic Committee, and **Frank A. Kilian** named assistant member, Research Group of the Committee.

UNION PACIFIC.—Morris L. Samuelson, assistant superintendent, Kansas division, Kansas City, Kans., appointed superintendent, California division, Los Angeles, to succeed **Leo B. Maskill,** transferred to the Idaho division.

WESTERN PACIFIC.—Robert W. Mustard named chief mechanical officer, San Francisco. He was formerly regional mechanical officer, **Penn Central,** New Haven, Conn.

TRANSIT

Thomas Sorensen, superintendent of way and power, **Port Authority of New York and New Jersey,** has been assigned for a period of one year to the **Highway Research Board, National Academy of Sciences.** He will work as a mass transit specialist, concentrating on a study sponsored by the Urban Mass Transportation Administration of DOT to examine the state-of-the-art of safety in all modes of mass transit. **J.H. Seamon,** formerly associated with the Transportation Control System Project of the Missouri Pacific in St. Louis, has joined the permanent staff of the Highway Research Board as manager of the Rail Research Information Service.

R. Peyton Tabb, who recently retired from the U.S. Army Corps of Engineers with the rank of colonel, appointed assistant general manager for transit system development, **Metropolitan Atlanta Rapid Transit Authority.** He will be responsible for design and construction of Atlanta's $1.3-billion rapid transit system.

William P. Maynard, assistant general manager for transit operations for MARTA, will retire after 27 years of service as soon as his successor is named.

Manuel Padron, senior project planner for Parsons, Brinckerhoff-Tudor-Bechtel, has been appointed director of planning for MARTA.

Terrell W. Hill has been named assistant to the general manager for intergovernmental relations for MARTA.

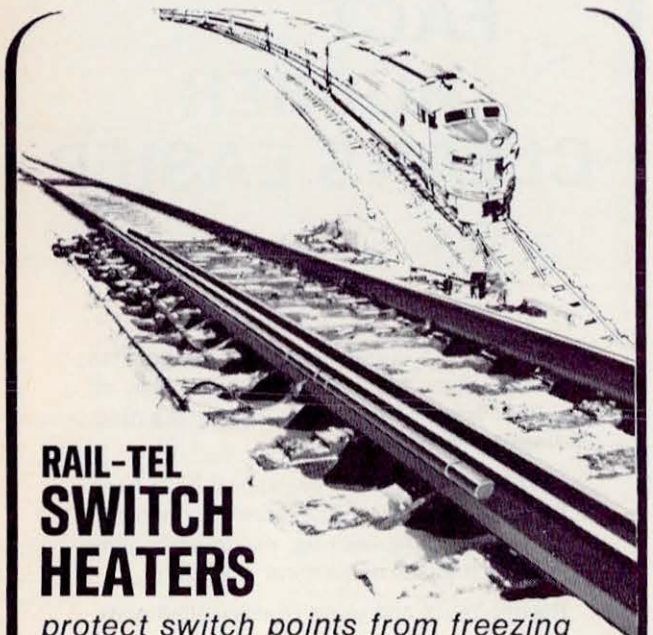
Rodney Larson named acting director of public affairs, **Urban Mass Transportation Administration,** Washington, D.C. Mr. Larson formerly served with the Price Commission. **J. Carroll Carter** appointed director, transit operations and management division, UMTA, a new post.

OBITUARY

William E. Crocombe, 85, retired vice president, **American Brake Shoe Co.,** died Oct. 7 at his home in Chicago.

Edward V. Cullen, 67, retired vice president and chief engineer, **Cullen-Friestedt Co.,** died Oct. 7 at the Hinsdale Sanitarium & Hospital, Hinsdale, Ill.

Norman H. Zeese, treasurer, **Chicago South Shore & South Bend,** died Sept. 11.



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Circle 18 on coupon page 33

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SAN FRANCISCO MUNICIPAL RAILWAY IMPROVEMENT CORPORATION
500 Arborway
Boston, Massachusetts 02130
INVITATION TO BID

Sealed bids for Contract No. BSF-72 will be received by the Contract Administrator acting for the Boston-San Francisco Committee at the office of the Director of Planning and Construction, 500 Arborway, Boston, Massachusetts 02130, until two o'clock (2:00 p.m.) Eastern Standard Time on January 11, 1973 immediately after which, in a designated room, the proposals will be opened and read publicly.

The above numbered Contract is more fully described as follows: FURNISHING AND DELIVERING LIGHT RAIL CARS. Contract consists of furnishing and delivering two hundred thirty (230) Light Rail Cars, with appurtenances as more fully described in the Contract Documents. One hundred fifty (150) cars shall be delivered to the Massachusetts Bay Transportation Authority (MBTA) and eighty (80) cars shall be delivered to the San Francisco Municipal Railway Improvement Corporation (SFMRIC), with an option to purchase up to thirty-seven (37) additional cars, twenty-five (25) cars for MBTA, and twelve (12) cars for SFMRIC.

This Contract is subject to financial assistance contracts between the Massachusetts Bay Transportation Authority, the San Francisco Municipal Railway Improvement Corporation and the Urban Mass Transportation Administration of the U.S. Department of Transportation.

Contract Documents may be obtained from the Contract Administrator at the above address (Tel. No. 1-617-722-6149) after October 25, 1972.

Any request from a prospective bidder for the interpretation of the meaning of the Contract Documents shall be made in writing to the Director of Planning and Construction, Massachusetts Bay Transportation Authority, 500 Arborway, Boston, Massachusetts 02130. All interpretations will be made in the form of written addenda to the Contract Documents, which addenda shall become a part of the Contract. The addenda will be mailed to all persons who obtain Contract Documents.

Bidders are required to acknowledge receipt of any Addendum (a) issued to this Contract by inserting the Addendum (a) Number in the space provided on Page C-21 of the Contract Section of the Standard Light Rail Vehicle Specification.

Provisions of this Invitation to Bid supersede Paragraphs 2a (Page A-2) and 3a (Page A-3) of Information for Bidders and Invitation To Bid of the Contract Section of the Standard Light Rail Vehicle Specification.

BOSTON SAN-FRANCISCO COMMITTEE

Date October 25, 1972 By J.C. Kelly
General Manager (MBTA)
Acting for the BSFC

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(202) 484-2730

NOTICE is hereby given that Metropolitan Transportation Authority will receive sealed bids for the purchase by it of the following aricles until the Sixth day of December 1972, on which date they will be publicly opened and read at the times indicated at the Authority's offices at 1700 Broadway, New York, New York 10019 (16th floor). Bids must be submitted on the inquiry forms provided by the Authority. Copies of such forms and applicable specifications may be secured from W.B. Garrison, Director of Contract Management, Metropolitan Transportation Authority, 1700 Broadway, New York, New York 10019.

No.	Articles	Bid Opening Time
PC 2-INQ.	Creosoted Wood Crossties, Delivery: February through	2:30 P.M.
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Viewpoint

Nov. 7: The vote, and what it means

On balance, rails and rail transit fared well at the polls last week. With the main race in little doubt, interest focused on local elections.

Perhaps the most interesting of these took place in Arkansas. There, voters threw out the last of the so-called full-crew laws (which the late Jim Lyne always insisted on calling, more accurately, "excess-crew" laws). This vote will save railroads operating in the "Land of Opportunity" around $13 million a year.

There were two local issues of primary interest to transit lobbyists. California voters defeated Proposition 14 on the ballot, which would have killed a special tax now providing Los Angeles with around $40 million a year for transit purposes—the loss of which, apart from forcing a substantial hike in fares, would have further delayed any progress toward implementation of a rail-transit plan. So that can be viewed as a major victory.

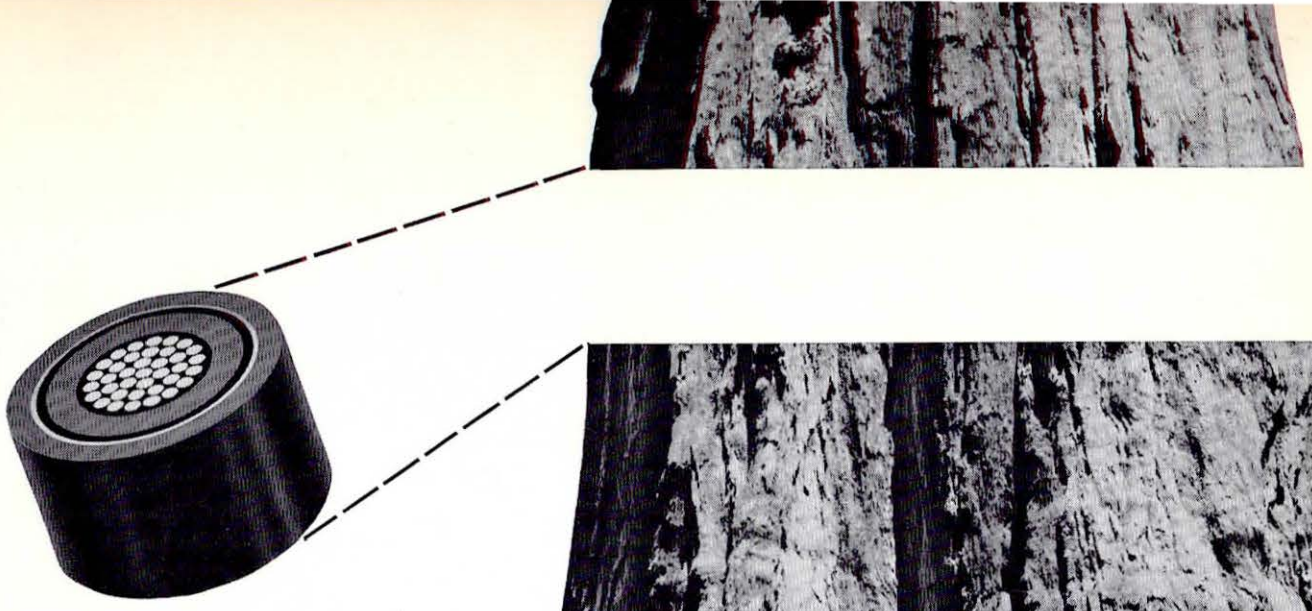
At the same time, New Jersey voters were defeating a $650-million transportation bond issue, which would have provided $410 million for highways and $240 million for mass transit (including $145 million for commuter railroads). But there was remarkably little distress among transit proponents at this turn of events. There was transit money still unspent from a $640-million bond issue approved in 1968; and there was the widely held belief that not only was the new proposal too heavily weighted in favor of highways, but new transit-fund promises may have been included just to win the vote.

As for Congress, it will change very little insofar as important transportation-related committee assignments are concerned. One change which is of great importance to rail transit interests is the loss of Colorado's Republican Senator, Gordon Allott. Allott was the third-ranking minority member of the Senate Appropriations Committee; Senator Clifford Case, the New Jersey Republican (who did win re-election), has been and remains the first-ranking minority member of this all-important committee. Together they were a forceful team promoting the interests of mass transit vs highways. Allott's loss will be especially keenly felt, since he was from a western, comparatively rural state and could not be accused of lobbying for the special interests of the populous East.

AND NOW, THE BIG QUESTION: STA

Of overwhelming importance, of course, though it was never really in doubt, is the fact that the Administration was returned to power on Nov. 7, and with it the existing Department of Transportation. Though there is still some doubt as to whether John Volpe will remain as DOT secretary, the basic policies of Mr. Nixon's DOT presumably will be unchanged. The big question now, as the new Congress begins to get ready for business, is: What will happen to the Surface Transportation Act in 1973?

The rail/highway/waterway-supported STA of 1972 came very close to passage this year, especially with the last-minute push it received from railroad labor and from the Administration (which earlier had held out for certain deregulatory and rate-making proposals unacceptable to the regulated modes). If the Administration supports the present version of STA when the new Congress convenes, it has an excellent chance of passage. But if the Administration, no longer under the axe of deadline, reverts to its earlier position, the whole package will again be in trouble.



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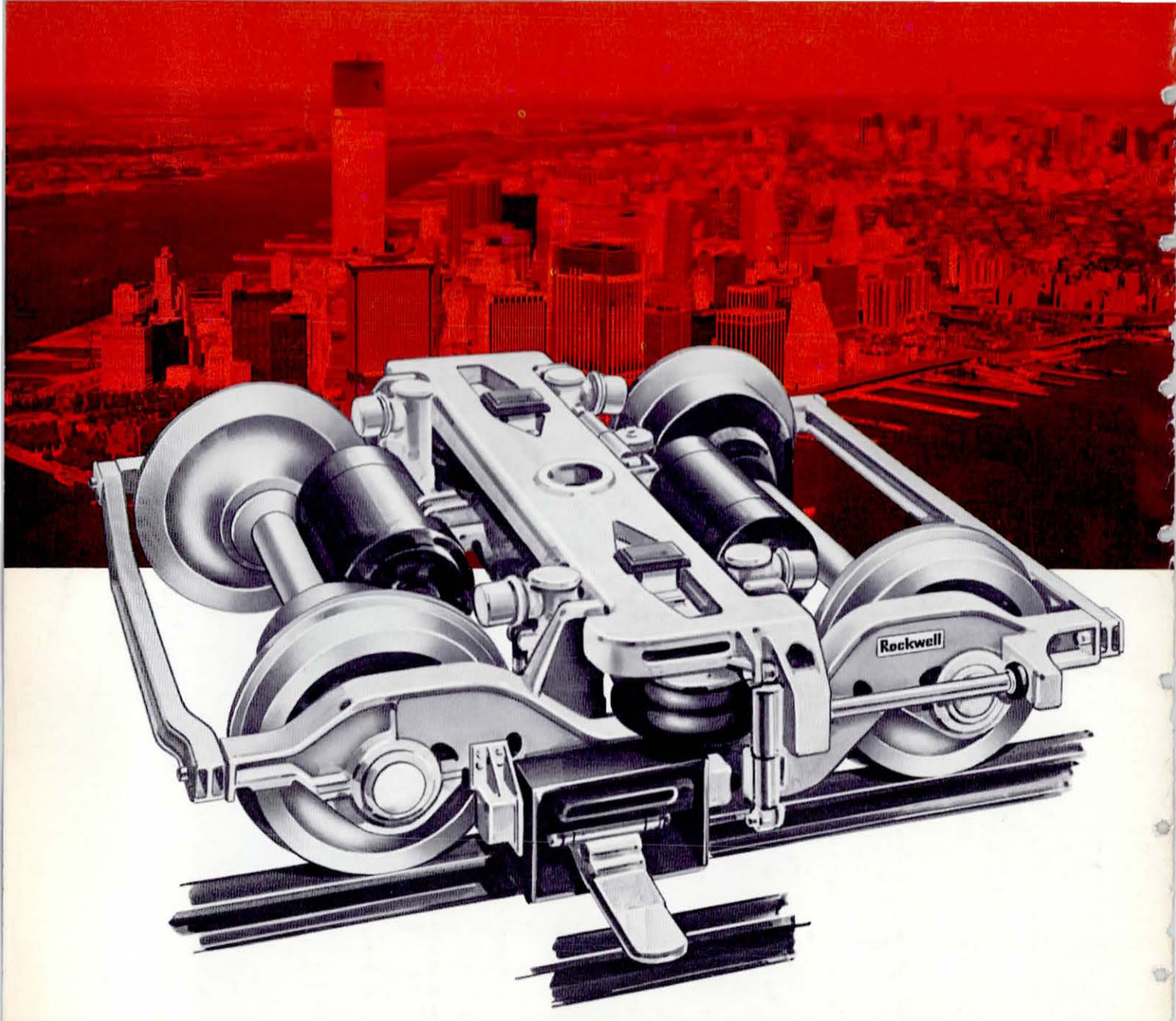

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